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Typographia,

OR THE

Printers' Instructor:

INCLUDING AN ACCOUNT

of the

ORIGIN OF PRINTING,

with

Biographical Notices of the Printers of England, from Caxton to the close of the Sixteenth Century:

A Series of

Ancient and Modern Alphabets,

and

DOMESDAY CHARACTERS;

Together with

An Elucidation of every Subject connected with the Art.

By J. JOHNSON, Printer.

Blest Invention, to God alone the praise!
For gifting man this noble Art to raise;
From thee what benefits do men possess!
The Pulpit, Bar, and Stage all now confess:
Trace the Historic page and view the time,
Before thou visited our native clime;
The want of thee kept Arts and Commerce low,
Without thy aid, how little could we know?
Thou art the means by which we gain redress,
Our Nation's bulwark is, *The British Press.*

Vol. II.

Published by Messrs. Longman, Hurst, Rees, Orme, Brown & Green, Paternoster Row, London.

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ADVERTISEMENT.

J. JOHNSON embraces this opportunity of filling up the present page, by announcing to the Admirers of the Typographic Art, and the Profession in general, that he has now a subject in hand, which he flatters himself will not only eclipse all his former productions, but likewise any piece that has ever yet appeared before the Public as a Typographic Specimen; it will consist of an arch, in perspective, supported by ten pillars, in the centre will be a monument to the memory of William Caxton, as the father of printing in this country, together with the names of the principal early nursers and improvers of our Art; the whole will be executed with brass rules and flowers: the size will be eighteen and a quarter, by thirteen inches, which will be printed on fine drawing paper. The above will appear in the course of the present Summer.

EXPLANATION OF THE ENGRAVED TITLE.

The design surrounding the inscription is a rich ancient screen placed before a chapel or shrine, the windows and ornaments of which are seen above. Upon the canopies which crown the screen, appear the Rose and Portcullis, the badges of King Henry VIII., who, in the year 1535, authorized the printing of the first English Bible: Vide Vol. I. page 465. Beneath is a representation of the Court of King Henry, taken from the frontispiece of Grafton's edition of Halle's Chronicle of 1548; with the Sovereign delivering Bishop Coverdale's Bible above alluded to into the hands of Archbishop Cranmer, and Thomas Cromwell Earl of Essex to publish it abroad. This group of figures is imitated from Hans Holbein's frontispiece to the Great Bible by Thomas Cranmer, Archbishop of Canterbury, published in 1539. Between this scene and the inscription of the Title are four panels, containing the Armorial Ensigns of celebrated Printers, namely, John Guttemburg, John Faust, the family of the Elzevirs, and that of the Aldi. At the sides of the inscription tablet, stand the effigies of John Guttemburg, the received inventor of printing, on the left; and Aldus Manutius, the inventor of Italic letter on the right. Below the inscription are the Armorial Ensigns of the Cities of Mentz, Strasburg, and Haerlem, the three places which lay claim to having had the most ancient printing executed in them. Beneath these shields is shewn the interior of a Library particularly rich in early Typography, the Bodleian at Oxford; and on the sides of it are the arms of four of it's most eminent patrons, namely, Humphrey, Duke of Gloucester, son to King Henry IV.; Sir Thomas Bodley, John Selden, and Richard Gough, Esqs.

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Typographia:

OR

THE PRINTERS' INSTRUCTOR.

Though hard's our task, we fearless tread this ground,
Hope whispers us, '*No work is perfect found.*'
Emboldened thus, we now proceed to state,
For th' use of men, what to our Art relate:
Should th' fastidious Critic vainly try,
Our best endeavours with his jaundic'd eye,
These questions let us ask, to set him right,
That he may view us in a favour'd light:
Has thy eye yet a perfect work o'er seen?
Look not from us, for what has never been!
How can imperfect man expect to find,
That which is not within the human mind?
Such being the case, our work we humbly trust
T' the Reader's candour---Englishmen are just:
To serve the Art, and mens' good will attain,
Should we succeed, Ambition's height we gain.

In performing this part of our duty, we shall endeavour, to the utmost of our humble ability, to explain every thing in as concise and clear a manner as possible; at the same time we shall omit nothing, however trivial, that may be connected with this important subject. In doing this, we are fully aware that some will condemn such minutiæ as unnecessary: but, let us ask, is it requisite, because a few are acquainted with it, that the information should be withheld from others? It is a subject which cannot fail to interest the general reader, and particularly so all the admirers of the Typographic Art.

When any one pronounces a printing-office as *complete*, it ought to be considered as a mere compliment, because, in a strict and literal sense, no office can deserve this epithet, unless it is furnished with all the fusil metal types for both modern and ancient languages: we believe that scarcely any office can boast the appellation. In truth, to supply these almostunnecessary founts would only waste a man's property; it is sufficient for a printer to have suitable types for the language of the country where he resides.

CHAP. I.

PROPERTIES AND SHAPES OF TYPES.

THE Types, or Letters, most generally used for printing in England, are termed *Roman*, *Italic*, and *Old English*, or *Black Letter*.

ROMAN LETTER.

ROMAN letter has long been held in the highest estimation; and is the national character not only of this country, but also of France, Spain, Portugal, and Italy. In Germany, and the kingdoms and states which surround the Baltic, letters are used which owe their foundation to the Gothic character; but even in those nations works are printed in their own language with Roman letters. The reason why the Germans, and those who patronize the Gothic characters, have not altogether rejected them for the Roman, has been chiefly owing to their apprehensions of sharing the fate of the primitive printers, who suffered greatly in their attempt, from the dislike then evinced by the learned to works which had been printed in that character. This compelled them to return to their old mode of using the Gothic, to which men of literature were more accustomed, from its resemblance to the writings of the monks, which at that time were held in great veneration. From the superstition of the age, the lower classes were easily prevailed on to reject whatever had the least appearance of infringing on monastic influence.

The same reason may be assigned why the Dutch still adhere to the black letter in printing their books of devotion and religious treatises, while they make use of the Roman in their curious and learned works.

In Sweden much greater improvements have been made, which is principally owing to the countenance and support of men of authority, learning, and taste.

We may reasonably hope, from the pleasing aspect of the present age, when mankind have dared to burst the fetters of prejudice and superstition, being determined to exercise their better judgment, and adopt plans more congenial to true taste, that the Roman character will be universally employed in all civilized states.

The Roman letter, it may be concluded, owes its origin to the nation whence it derives its name; though the face of the present and the ancient Roman letters materially differ, from the improvements they have undergone at various times.

The Germans and their confederates differ from us in calling those letters *Antiqua*, which we, as well as the French and other nations, term Roman. An inquiry into the cause of this distinction can be of small importance, further than it might prove a desire in the Germans to deprive the ancient Romans of the merit of forming those letters.

That good Roman makes the best figure in a specimen of typography, cannot be disputed; and this superiority is greatly improved by the founders of the present day. A printer, in his choice of type, should not only attend to the cut of the letter, but also observe that its shape be perfectly true, and that it lines or ranges with accuracy. The quality of the metal of which it is composed demands also his particular attention. The ingenious Mr. Moxon says,

"That the Roman letters were originally intended to be made to consist of circles, arches of circles, and straight lines; and that therefore those letters that have these figures either entire, or else properly mixt, so as the course and progress of the pen may best admit, may deserve the name of true shape."

By attending to the above mathematical rules, the letter-cutter may produce Roman characters of such harmony, grace, and symmetry, as will please the eye in reading; and, by having their fine strokes

and swells blended together in due proportion, will excite admiration in those who may take the pains of comparing the smaller with the larger sized letters. But to assert possitively what foundery can boast of true shaped letters would be speaking with too much presumption; since it is agreed, even by able penmen, that none can strike two letters of the same signification, so as, upon the strictest examination, to have the same likeness. If, therefore, it is impossible to write a true duplicate upon paper, it may be excused in those who attempt it in steel: for, were it practicable to copy so as to make it impossible to discover the least deviation from the original, letter-cutters too would then be able to supply accented letters, and such as are contained in ligatures, of the exact shape and symmetry with those of the main alphabet, though even these should have nothing but the fancy of the artist in support of their being true shaped.

We are aware that a variety of opinions exist respecting true-shaped letters; therefore we shall abstain from entering into a controversy upon that head, being persuaded of the impossibility of bringing a number of persons into the same way of thinking. As the Germans are justly entitled to the merit for the invention of typography and metal types, so are the Dutch famed for their improvement of the latter: which was held in the highest estimation for many years, till they were rivalled by our countrymen; from which period Dutch letter ceased to be imported for our use.

It is equally important that types should have a deep face, which will depend upon the depth of the punches, their hollows being in proportion to the width of the respective letters, and likewise that the punches are sunk into the matrices; for should there be a defect in this respect, the letter, of course, will

have a shallow face, and prove unprofitable to the purchaser, as was the case in France, where printers had very great reason to complain of the shallowness of the letter cast by their founders.* And though this, at present, is not the case in England, it may nevertheless be observed, that some of our Roman lower-case sorts are not equally fortified to endure the weight of the press, especially in founts of the less sizes, where the a, e, s, w, are worn out before the other sorts are materially injured; which few sorts, were they re-cast, and the old ones thrown out, would render a fount serviceable for a series of good standard works.

The composition of type metal depending entirely upon the discretion of the founder, and a considerable difference prevailing among them, often to the detriment of the printer, to whom it is a matter of great import that his type should repay him ample interest for its immense expense, we shall refer again to the ingenious Mr. Moxon, who has particularised the species and quantities of ingredients he made use of:

"To 28lb of metal, it required 25lb of lead, mixed with 3lb of iron and antimony melted together."

In Germany, steel, iron, copper, brass, tin, and lead, are incorporated with each other by means of antimony; and the quality of this metal is such, if properly prepared, that it will not bend, but break like glass; it is harder than tin and lead, something softer than copper, and melts sooner than lead. How

* With respect to the above defects in letter, M. Fertel, a St. Omers' printer, has inveighed against them in the following terms:

"We need not wonder that our press-work does not look better; for if the paper is apt to sink, or otherwise deceives the person that wets it, and the ink happens not to be very clean, the eye of the letter is presently filled up; the pressman then, with his bodkin, turns graver, but with such an unsteady hand, and with so little precaution, that he more hurts than clears the letter. Had our characters the same depth as those abroad, French press-work would undoubtedly make a better figure also; but we have had new founts where the relief part of some sorts (considered from the centre of their hollows) did not answer to above the thickness of ordinary paper for printing---which is a shame!"

the metal is prepared in Holland is not precisely known; but there is sufficient reason to suppose that it differs both from the German and English.

Besides the three principal properties which we have mentioned, the following (like Satellites to *good* letter) are not undeserving the purchaser's examination, who ought to take notice,

1. Whether the letter stands even, and in line; which is the chief good quality in letter, and makes the face thereof sometimes to pass, though otherwise ill-shaped.
2. Whether it stands parallel; and whether it drives out or gets in, either at the head, or the foot, and is, as Printers call it, *bottle-arsed;* which is a fault that cannot be mended but by rubbing the whole fount over again.
3. Whether the thin lower-case letters, especially the dots over the i and j, are *come* in casting.
4. Whether the break is ploughed away and smoothened.
5. Whether it be well scraped, so as not to want rubbing down by the compositor.
6. Whether each letter has a due proportion, as to thickness; and whether they are not so thin as to hinder each other from appearing with a full face; or so thick as to occasion a gap between letter and letter.
7. Whether it be well bearded: which founders in France are obliged to do, to their own disadvantage, on account of their shallow letter. *
8. Whether it have a deep and open, single or double nick, different from other founts of the same body, and in the same printing-house.

We cannot too strongly urge the advantage to be derived from letter having a deep nick, and also that the nick should differ from other founts of that body in the same house. This may appear a trifling consideration; but in a large fount the difference in weight will be considerable, and consequently a saving to the purchaser. A deep nick is an advantage to the compositor, from its more readily catching the eye than a shallow one, and consequently greatly facilitates him in his business.

* The French and Dutch put a shallow narrow nick to their letter; the former, to be singular, place the nick on the back of the letter.

ITALIC LETTER.

For the invention of this letter we are indebted to Aldus Manutius, by birth a Roman, who erected a printing-office in Venice, 1496, where he introduced the Roman types of a neater cut, and gave birth to that beautiful letter which is known to most of the nations in Europe by the name of Italic: though the Germans, and their adherents, show themselves as ungenerous in this respect as they did with the Roman, by calling it Cursiv, *in order to stifle the memory of its original descent, and deprive the Romans of the merit due to their ingenuity.*

In the first instance it was termed Venetian, from Manutius being a resident at Venice, where he brought it to perfection; but not long after it was dedicated to the state of Italy, to prevent any dispute that might arise from other nations claiming a priority, as was the case concerning the first inventor of printing.

Italic was originally designed to distinguish such parts of a book as might be considered not strictly to belong to the body of the work, as Prefaces, Introductions, Annotations, *&c. all which sub-parts of a work were formerly printed in this character; so that at least two-fifths of a fount was comprised of Italic letter.*

At present it is used more sparingly, the necessity being supplied by the more elegant mode of introducing extracts within inverted commas, and poetry and annotations in a smaller-sized type. It is often serviceable in displaying a title-page, or distinguishing the head or subject-matter of a chapter from the chapter itself. To plead the necessity of Italic to distinguish proper names of persons and places, would be altogether needless; and argue, that the present age is less capable of apprehension than our forefathers, who knew the sense and meaning of words before Italic existed, at a period when one kind of type served for the title, body, and all the other parts of a work.

That this character was not designed to distinguish proper names, nor for several other uses to which it has been applied, can be readily proved, even from works printed in this country. Many have considered it as depriving Roman of its beauty, by loading it with Italic words and terms of common signification and meaning; and have thought it inconsistent to intermix letter of an erect position with that of an oblique inclination.

What Roman letter suffers by being interlarded with Italic, is of equal importance to this, when it is invaded by the former: because Roman having a much bolder appearance than Italic of the same body, takes advantage of the soft and tender face of the latter; which, in England, has arrived to a high degree of perfection. Is it not a pity that two such significant bodies as Roman and Italic, of which neither stands in need of the other, should often be so maimed, that it is difficult to discover which of them is most entitled to our decided preference?

It would be a desirable object, if the use of Italic could be governed by some rules. We shall here recommend to those authors who appear so solicitous, by their frequent introduction of Italic, that the beauty and essence of their writings may not be lost, to trust a little more to the discernment and understanding of their readers. That the frequent use of Italic is useless, and generally

* Upon the establishment of the Roman character, the Germans used it for proper names and words of Latin. But if the English adopted their idea, and put similar words in Italic, they are not upon an equal footing with the former; the Roman and German being of a parallel position, but Italic of an oblique inclination: The mixture of types has been attributed to the fancy of some author, whose work abounded with proper names either of persons or places; and, in order that such words might be more readily seen in the text, which would save him the trouble of reading over the whole work when he had occasion to make out an Index of the names contained in the matter, the names would appear more conspicuous to the reader, by being in a different character. That such a contrivance may have afterwards been looked upon as an improvement; or the printer may have supported the same, to make more use of his Italic, seems not altogether improbable.

absurd, cannot be doubted. The compositor is materially retarded, by moving from one case to another.

It is too often made use of to mark emphatical sentences or words, but without any direct rule. It destroys in a great measure the beauty of printing, and often confuses the reader where it is improperly applied, who, pausing to consider why such words are more strongly noted, loses the context of the sentence, and has to revert back to regain the sense of his subject.

Not only does Italic confuse the reader, but the bold face of the Roman suffers by being contrasted with the fine strokes of the Italic; that symmetry and proportion is destroyed, which it is so necessary and desirable to preserve, the former being a parallel, the latter an oblique position. Nor can we discover for what purpose it was at first introduced into the body of a work, in names of persons, places, dates, &c. unless that might have been thought an improvement, which the better judgment of the 18th century, much to its credit, considers otherwise. Were gentlemen informed of the inelegance occasioned by a mixture of Italics, they would dispense with it.

Let it not be imagined, from what has been said, that we enter our protest against the necessity of Italic in every instance; its utility must be allowed in critical and satirical works, &c. where the sense requires a distinguishing mark on a particular word or subject: we wish to be understood as not arguing against the use *of Italic, but the* abuse *of it.*

Italic, if justly formed, discovers a particular delicacy, and requires considerable mathematical nicety in the letter-cutter to keep the slopings within the degree requisite for each body. But this is not always attended to, as a want of uniformity is too often observed in two lower-case letters of a particular sort coming together, which require an hair space between them to prevent their riding, and occasions an unpleasant gap.

BLACK LETTER.

This letter, which is used in England, descended from the Gothic characters: it is called Gothic, by some; and Old English, by others; but Printers term it Black Letter, on account of its taking a larger compass than either Roman or Italic, the full and spreading strokes thereof appearing more black upon paper. On the introduction of the Roman character, its use began to decline, and it was seldom used except in Law works, particularly Statute Law; it was at length expelled from these, and only made its appearance in the heads of Statutes, &c.

According to the predictions of all our predecessors, it was reasonable to conclude that it would, ere this, have been banished from every office, and consigned to rest in Oblivion's tomb, with its parent the Gothic, which, in the primitive time of printing, was the established character, and prevailed against the Latin; which had been first introduced in Spain, by Alphonsus VI. 1080, when that Prince put an end to writing in Gothic characters throughout his dominions. This opinion might have been fulfilled, had not our founders produced the above modern Black; which so captivated the printers, that it immediately became in general use, being cast in all the various sizes, both Full-faced and Open.

Upon the gradual improvement of metal types, our Founders (emulating each other) in addition to their plain two-line letters, commenced cutting open letters of almost every size: yet here their exertions did not end, they have now taken [nearly] the whole range of Fancy, in bringing forward ornamented letters of every size and description, together with a new character, which they term Egyptian: this latter is all the rage at present, particularly in placards, jobs, &c.

CHAP. II.

THE DIFFERENT SIZES OF PRINTING LETTERS.

THE several bodies to which printing letters are cast in England, are nineteen in number, viz.

1. Diamond.
2. Pearl.
3. Nonpareil.
4. Minion.
5. Brevier.
6. Burgeois.
7. Long Primer.
8. Small Pica.
9. Pica.
10. English.
11. Primer.
12. Great Primer.
13. Paragon.
14. Double Pica.
15. Two-lines Pica.
16. Two-lines English.
17. Two-lines Great Primer.
18. Two-lines Double Pica.
19. French Canon.

REGULAR-BODIED LETTER.

THE class of regular-bodied letter takes in, viz. Great Primer, English, Pica, Long Primer, Brevier, Nonpareil, and Pearl: but to those which go before them, viz. French Canon, Two-lines Double Pica, Two-lines Great Primer, Two-lines English, Two-lines Pica, and Double Pica, we will give the name of Title-letters; considering that the first three sorts are used in titles of books, and in jobs, only, to make emphatical words or lines appear more conspicuous. And as to the three other sizes, they are mostly used in heads, and for jobs; though they, and even Two-lines Great Primer, sometimes serve for short Dedications, or Prefaces, to works of a large size.

Among the Title-letters, Two-lines Pica being looked upon as a letter of no general use, and very apt to be mixed with Double Pica, but few printers are fond of it; especially as they find that the difference between Two-lines Pica and Double Pica, as well in face, as body, is but inconsiderable; and that of the two, the latter is fittest for poems, prefaces, and other introductory parts of a work.

That Double Pica is not the right name for that letter, no printer will disown, because its depth an-

swers to Two-lines Small Pica, and ought, for that reason, more properly to be called Double Small Pica: which gives us room to suppose, that the same letter which now answers to two lines of Small Pica, has been also cast to the depth of two lines of Pica; but, being judged too small-faced for that size, it has been reduced to two lines of Small Pica.*

IRREGULAR-BODIED LETTER.

THE several sorts of irregular-bodied letters are, Paragon, Primer, Small Pica, Burgeois, Minion, and Diamond. We call them irregular, because they are of intermediate sizes to letter of regular bodies; a standard for which, no doubt, was fixed by former printers and founders.

What has been mentioned about Two-lines Pica, may be equally said of Paragon, and the rest of irregular-bodied letter, viz. that they may be spared in a printing-house well provided with fusil materials of regular bodies: for none can well plead their necessity, but such as are sure to reap a benefit from being furnished with them. For the rest, irregular-bodied letter is apt to cause confusion in a printing-house, and is therefore the less countenanced by most printers. But because irregular-bodied letter of the smaller sizes sometimes serves the ends of proprietors of standing and selling copies, this seems one reason that it has been attempted; otherwise the sizes of printing letter would not perhaps have been carried lower than Brevier.

Among the irregular bodied sorts of letter none has taken so great a run as Small Pica; and very considerable works have been done in that character, &c. It is a letter, indeed, which was not taken

* The London type-founders have latterly cut a letter on Two-lines Pica body, which they term a regular size, between Double Pica and Two-lines English, for which see our Specimen.

much notice of before it appeared in Chalmers's Cyclopœdia; but it has raised its reputation ever since, and is now become the favourite character to do voluminous works in; partly, because it is a round and legible letter, and partly because it takes in considerably more matter than Pica---the very best size for printing letter. In the mean time the purchasers of works printed in Small Pica have the advantage; for they have more than an adequate value for their expenses, especially if the matter is useful and entertaining.

DIFFERENCE OF SIZES IN LETTERS.

THOUGH all founders agree in the point of casting letter to certain bodies, yet, in the article of casting each body always to one and the same size, they differ; insomuch that not only founders of different places, but of the same residence, and even each in particular, often vary in height and depth;* both

* In our frequent conversations with type-founders upon this subject, we find that they invariably blame the printers for the errors into which the whole trade has fallen: indeed, we candidly acknowledge that there is too much truth in the charge. The founders ground their argument upon the printers refusing to adopt their suggestion of fixing a standard, at the time the long s was abolished: the latter would not consent, when having new founts, to lose their old spaces and quadrats: thus were the founders compelled to follow their blind, uncertain road, to the great detriment of the printers. We shall give one example in proof of the culpability of the latter, namely, of one of the greatest London printers ordering the late Mr. Jackson to make moulds of every size considerably below the then acknowledged standard to paper, the professed object of which was, to avoid borrowing or lending sorts; this plan is now considerably increased, so that the founders are continually put to the inconvenience of altering their moulds, both as to height to paper and depth of body, in order to accommodate the whim or caprice of this or that particular printer. But this is not the only evil, the latter no doubt are waiting for the sorts during this alteration; the next day comes another printer for imperfections, then the mould is to be re-altered to what it was originally, and he also is compelled to wait the unavoidable delay! thus, with these perpetual deviations, not only is the printer retarded in his business, but he not unfrequently get his sorts cast in some of these wrong moulds, which, when mixed with his fount, prove destructive to the whole. Had the Dutch founders acted upon this plan, how could

which seem rather to have increased: but whether the founder (to make his letter more weighty), or the printer, (to grace it with more distance between the lines) has occasioned this digression from the former sizes, we shall not scrutinize; but only suppose that it commenced with the time when English printers were obliged to furnish themselves with good letter from abroad.

Few offices, of any extent, are without two or three founts of a particular size letter, cast by different founders. It often occurs, that a sort may be short in one, of which there is a superfluity in the other; but, from their different face, &c. cannot be used together; in this case, not only an expense is incurred, but a delay occasioned to the work from the time it necessarily takes to cast imperfections.

This is not the only inconvenience. In the best regulated offices, it is impossible to prevent founts from being mixed, which occasions loss of time to the compositor, who, if he be a careless man, will not take the trouble to put the sorts in their proper places when marked in his proof, but will commit them to the old metal box, for the benefit of the founder, to the serious injury of the printer.

Another, and very considerable fault, may be alleged against the founders, who seem to have

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Imperfections, or even founts, have been obtained from them with any degree of accuracy, independent of the delay! No: they had one fixed and undeviating standard, which they copied from the Germans, for all their sizes, and which they continue to this day. We shall close this note with an observation of an experienced practical letter-founder, who, when speaking of the above defects, remarked, that the present system is bad, and most destructive; that the founders were all wrong together; and, in order to obtain perfection, every thing at present in the business should be destroyed, when they should commence again with a settled, firm, undeviating standard for every [now regular, or irregular] size. Till this is done, we cannot expect to see any thing like perfection; but must acknowledge that the art, instead of advancing has made a retrograde motion.

neglected, in their zeal to produce beautiful specimens, that exactness as to the depth of their types, which is so essentially necessary. We lately witnessed, in a fount of new letter, where a particular sort was run down the side of the same number of lines in the body, a variation of at least one-third of its own depth. This is fatal to table-work, as it entirely destroys that nicety so requisite in justification.

That the size for each body of letter was fixed, and unalterably observed, by our ancient letter-founders, seems to be out of doubt; or the ingenious author of Mechanic Exercises would not have given us a table of the sizes of letter, in his time, without reservation. In order, therefore, to see the difference between the depth of letter in Mr. Moxon's time and that which is cast at present, we shall insert this author's own table of sizes, in which he has carried the number of m's, or (which is equally the same) lines of matter of each body of letter to the length of 12 inches, or one foot; which we shall observe in our counter-table, similar to Mr. Moxon's.

Pearl	184
Nonpareil	150
Brevier	112
Long Primer	92
Pica	75
English	60
Great Primer	50
Double Pica	38
Two Lines English	33
French Canon	17½

These are all the bodies of letter noticed by the above author, from which it appears, that in his time printers were not incumbered with so many different founts as they are at present; for now there are seven sorts of letter more than are exhibited in the preceding table, viz. Minion, Burgeois, Small Pica, Para-

gon, Two-lines Pica, Two-lines Great Primer, and Two-lines Double Pica. For, if these seven sorts had then existed, Mr. Moxon would not have failed to have mentioned them, as he does Small Pica; concerning which he says:

"We have one body more which is sometimes used in England, that is, a Small Pica; but I account it no discretion in a master printer to provide it, because it differs so little from the Pica, that unless the workmen be more careful than they sometimes are, it may be mingled with the Pica, and so the beauty of both may be spoiled."

Hence we may guess what little regard was had for that one irregular-bodied letter, Small Pica, by not giving it a place with the others in the table. How much less value, therefore, would Mr. Moxon have set upon our Minion, Burgeois, and Paragon, had he ever seen them. We will first compare the depth of the seven additional sorts of letter, proportionable to the sizes in the foregoing table, and then give the sizes of all the bodies of letter which are now extant.

Diamond, then, whereof two lines answer to the depth of one Burgeois,* would, according to Mr. Moxon, have required 200 m's, or lines, to the length of one foot.

Minion, which has English for its two-line letter, would have required 132 m's.

Burgeois	100
Small Pica	76
Primer	50
Paragon	46
Two-lines Pica	37½
Two-lines Great Primer . .	25
Two-lines Double Pica . .	19

* Diamond, like all other sizes, differs both in face and body: some founders cast a small-faced Pearl upon a Diamond body, others have a Diamond which differs from the Pearl both in face and body, as much as the latter does from Nonpareil. Two lines of some Diamond will answer to one of Burgeois, others are rather smaller.

Thus would the sizes of these nine sorts of letter have run, had they been cast one hundred and thirty years ago. And now we have reduced them to the standard which they had at that time. Here follows our counter-table, which will shew how far our *present* sizes of letter differ from the *former*.*

Canon	18¼
Two-lines Double Pica	20¾
Two-lines Great Primer	25½
Two-lines English	32
Two-lines Pica	35
Double Pica	41¼
Paragon	44¾
Great Primer	51¼
English	64
Pica	71¼
Small Pica	83
Long Primer	89
Burgeois	102¾
Brevier	112¾
Minion	128
Nonpareil	143
Pearl	178
Diamond	205

This is the state of our modern sizes of letter. The table is drawn up to shew the size which each body of letter, here specified, now has; but let us not conclude from thence, that each fount of letter is always cast to one and the same size in its body. Were this the case, we should not take the liberty to say, that whoever was the author of casting founts of the same body to different sizes, has no room to boast that he has improved printing; but has done so much hurt to it, that the ill consequences thereof would be too many here to enumerate.

How apparent is the harm and confusion which the

* Although we have given the above standard of sizes, still we must repeat (as we have before observed in the note at page 15, ante,) that none of the founders have a regular standard, but that all of them possess moulds of various sizes.

differing in the size of letter of the same body is able to produce! and that therefore it ought to be made a rule, that each of the different bodies of letter should always be cast to the same height, depth, and line, by letter-founders of the same place, at least. But whether such a reformation would be cheerfully made by founders, is a question, unless they were urged to it by a joint agreement of the most considerable printers, who always are furnished with more than one fount of the same name; and who consequently run the greater hazard of having the beauty of their letter quite destroyed, if sorts of one fount should be made use of in another which is not of the same size. As ocular, therefore, as the mischief is, which arises from different sizes to the same body of letter, so demonstrable is the reciprocal benefit which would result to printers and founders, from casting each body of letter to one and the same size. The latter, then, would not be at the expence of so many moulds---the more current founts might always be casting and dressing, because they would suit every one who should have occasion for a fount of them; and by keeping a fount-case contrived for that purpose, and always supplied with sorts, Printers might be instantly served with what they should want, without borrowing. Another advantage would be found, when a printing-house should happen to be sold, that the letter of it would stand with another fount of the same body, to be used either by itself, or to be mixed, provided they should agree together as to wear.

Thus, by stating the conveniencies which would arise from an uniformity in casting each body of letter to the same fixed size, it will be needless to particularize the contrary effects; since, without much speculation, every one may guess of what detriment

it must be to a printing-house which has several founts of the same body, but which differ in their sizes: the consequence must be, that the length of pages (though of the same number of lines) as well as of furniture, will vary according to each size; neither will rules, leads, reglets, &c. cut to any number of m's of one fount, answer to a measure of the same number of m's of another fount, which is either deeper or shallower in size. Nor is it possible to prevent letter from mixing, which is cast in the same matrices, and which has hardly any difference in the nick. These are some of the unavoidable consequences which arise from having different founts of the same body, not of one and the same size. The reasons, therefore, which are given in defence of this irregularity, ought rather to be regarded as subterfuges to support an argument which may be quashed, without leaving it to the approbation of a professed printer.

To have regard that the face of letter be proportionable to its body, is the letter-cutter's province: we are therefore of opinion, that the different sorts of irregular-bodied letter owe their existence to accident; and suppose, that a letter may have been cut, the face whereof happened to prove too large for one of the regular-bodied sizes, and too small for another; and that therefore the founder used the expedient of casting it to an intermediate body, which we will suppose to have been Paragon: and this turning out a handsome letter, the founder, no doubt, recommended it as an improvement to some good printer, who had the complaisance to allow the founder to be the best judge in this case. And this accident might lead the way to introducing intermediate sized letter between other regular bodies: hence we have, between Pica and Long Primer,

Small Pica; between Long Primer and Brevier, Burgeois; and between Brevier and Nonpareil, Minion. Of Paragon it may be further remarked, that it was cast to be the intermediate letter between [real] Double Pica and Great Primer, till Small Pica coming in, the real Double Pica (as we before observed) was reduced to a two-line letter of Small Pica; and real Double Pica, or Two-lines Pica, substituted by a new letter, cut on purpose. For the rest, Paragon is a letter not met with in many printing houses neither abroad nor here, where it has lately been introduced, and has now a place among the other beauties in our type-founder's specimens.

What Irregular-bodied letter is particularly to be admired for is, that each has been cut here purposely for their respective bodies; whereas in France their La Philosophie, or Small Pica, is cast in the identical matrices of Cicero, or Pica; their Gaillarde, or Burgeois, in those of Long Primer, and their Mignone, or Minion, in the same as Brevier: so that the cutting of Punches for three sorts of regular bodied letter, serves there for as many of irregular body.*

* A saving way, similar to this, was attempted by M. Jalleson, who was a letter founder, from Germany, and lived in the Old Bailey, where he printed the greatest part of an Hebrew Bible, with letter of his own casting; but was, by adverse fortune, obliged to finish it in Holland. He, from three sets of punches, proposed to cast six different bodies of letter, viz. Brevier and Long Primer from one set; Pica and English from another; and Great Primer and Double Pica from a third. Accordingly, he charged his Brevier, Pica, and Great Primer, with as full a face as their respective bodies would admit of; and in order to make some alterations in the advancing founts, he designed to cut the ascending and descending letters to such a length as should shew the extent of their different bodies. But though he had cast founts of the three minor sorts of letter, he did not bring the rest to perfection here.

CHAP. III.

A FOUNT OF LETTER, AS CONSIDERED BY LETTER FOUNDERS.

A COMPLETE fount of letter is comprised under nine heads, in which is contained the following sorts:

1. *Capitals.*

A B C D E F G H I J K L M N O P Q
R S T U V W X Y Z Æ Œ.

2. *Small Capitals.*

A B C D E F G H I J K L M N O P Q
R S T U V W X Y Z Æ Œ.

3. *Lower Case.*

a b c d e f g h i j k l m n o p q r s t
u v w x y z æ œ &.

4. *Figures.*

1 2 3 4 5 6 7 8 9 0.

5. *Points, &c.*

, ; : . ! ? - ' ( ) [ ] * † ‡ § ‖ ¶.

6. Four kinds of spaces. 7. M and n quadrats
8. Large quadrats, two, three, and four m's.
9. Accents.

These are the ordinary sorts cast to a fount of letter, and which the founders divide into long, short, ascending, descending, and kerned letters.

LONG LETTERS.

LONG LETTERS are those which take up the whole depth of their bodies, and are both ascending and descending, such in the Roman, as Q and J, in letter of the old cut; but in the Italic, besides these capitals, *f* is a long lower-case letter.

SHORT LETTERS.

SHORT LETTERS are all such as have their face cast on the middle of their square metal, by founders called shank, as, a, c, e, m, n, o, r, s, u, v, w, x, z, all which will admit of being bearded above and below their face, both in Roman and Italic.

ASCENDING LETTERS.

ASCENDING LETTERS are all the Roman and Italic capitals; in the lower case, b, d, f, h, i. k, l, t.

DESCENDING LETTERS.

DESCENDING LETTERS are g, j, p, q, y, in Roman and Italic. Ascending letters, in founts of the old cut, when they happen to stand under descending letters, are liable to be damaged; to prevent which the compositor should vary his spaces.

KERNED LETTERS.

KERNED LETTERS are such as have part of their face hanging over either one or both sides of their square metal or shank. In Roman, f and j are the only kerned letters; but in Italic, *d*, *g*, *j*, *l*, *y*, are kerned on one side, and *f* on both sides of its face.

Casting of the above sorts being attended with considerable trouble, accounts for the founders sending so few of them in a fount of letter, when in fact they require a larger number than their casting bill specifies; their beaks being liable to accidents, especially the Roman f, when at the end of a line. Kerned letters of the Italic, especially *f*, *g*, *j* and *y*, are also subject to the *same* risk.

Most Italic capitals are kerned on one side of their face; but none ought to be more attended to than *F*. *T*, *V*, *W*, and *Y*, that their angles may not fall upon an ascending letter, that may stand next to them.

The kerning of letters, it must be owned, may serve many good purposes; of which the following are not altogether undeserving notice:

1. In mathematical and algebraical works, where letters, figures, &c. are expressed according to the signification which they have either over or under them, and might be put more safely over or under

kerned characters, than be justified to them, which would render the composing of algebra more easy, and the work would have a more solid appearance.

2. In etymological dictionaries, the vowels, as well of large as of small capitals, might be kerned, to make room for the accent which governs the pronunciation of a word, whereby the separation which the acute makes between each letter, would be prevented.

3. In Hebrew, one alphabet kerned on one side, and another on both sides, with vowels cast in the nature of Greek accents, would make room for the proper vowels to be put under consonants more readily than by justifying them, in separate lines, to their places. But kerned letters will not afford proper room for vowels and accents too, therefore the accents are justified over and under the respective places, when their quality is expressed.

That some founders have been more liberal than others in kerning letters, appears from the care they have shewn in preventing the Italic capital *A* from causing a gap, where it is preceded by capital letters which are not kerned; especially when they stand after *F*, *P*, *T*, *V*, *W*, and *Y*, from which the *A* separates itself more perceptibly than from any of the other letters. The foregoing should (properly) be kerned, in order that their propensities may cover the back of the protruding angle of *A*.

These are the classes into which the letter-founders divide the sorts of a fount, without including accented letters.

DOUBLE LETTERS.

DOUBLE LETTERS were originally formed for the convenience of one kerned letter joining with another, as in the instance of a ff, ff, fi, fl, &c. as their

beaks would inevitably receive damage unless they were cast in one piece.

Of the number formerly used few now remain, and those permitted only through necessity, as the fi, ff, fl, ffi, and ffl. The introduction of the round s, instead of the long, is an improvement in the art of printing equal, if not superior, to any which has taken place of late years, and for which we are indebted to the ingenious Mr. Bell, who introduced them in his edition of the British Classics. They are now generally adopted, and the founders scarcely ever cast a long f to their founts, unless particularly ordered. Indeed, they omit it altogether in their specimens, wisely judging that the fewer ascending or descending letters are introduced, the more their types shew to advantage. They are placed in our list of sorts not to recommend them, but because we may not be subject to blame from those of the old school, who are tenacious of deviating from custom, however antiquated, for giving a list which they might term imperfect.

The late Lord Stanhope, among his other improvements in printing, of which we shall have occasion to speak hereafter, has formed a scale for casting a fount of letter, differing completely from those of the regular founders: he abolishes altogether the double letters now in use, which he effects by cramping the beak of the f in such a manner as to permit any ascending letter to stand next to it; and introduces a number of other ligatures, which, it is asserted, will save much time to the compositor, from their more frequent use.

Judging from former times, when ligatures, such as ra, ta, as, is, us, &c. were used, and abolished because they encumbered the compositor, who, so far from thinking they expedited him in his work, took

every opportunity of committing them to the old metal box, we much fear the Stanhopian introduction of *an*, *in*, *of*, &c. will *not* be found to meet with a much more favourable reception.

From every consideration of advantage to a master printer, we would advise the dispensing with every sort but what is really necessary, for this, though not the only reason—they cannot avoid having, at times, men in their employ who are careless in their business. It has been asserted, that the greater the number of boxes in a case, the more harbours there are for pie, which is proved by daily experience; and that the boxes formerly appropriated for (now discarded) double letters, should be thrown into the general case, which would reduce its size, and prevent the careless workman from disposing of his pie, and most frequently very useful sorts, in these spare receptacles: to this we shall answer, that if all the boxes were appropriated for useful sorts, the above objections would vanish, (because the compositor would not find his advantage in having them buried with pie) this we hope to sufficiently prove in our scale of an improved case, in which we have considerably multiplied the number of boxes.

The expense, likewise, in casting a fount of letter with such a number of heavy sorts, will be considerable, when it is considered that the damaging of one letter is the destruction of two, and will operate very strongly in favour of what we have taken the liberty to suggest. With pleasure we allow our tribute of praise to the late Lord S. for the attention he has paid to the improvement of the art, and we should have no objection to his plan for abolishing the double letters attached to the f, provided it could be done without destroying the beauty of that character.

THE NUMBER OF EACH SORT CAST TO A BILL OF PICA, ROMAN AND ITALIC.

THIS part of our work might be extended to a considerable length, were we to enter into the minutiæ of the different sorts requisite to form a complete fount for every language printed in the Roman character; but as this would be carrying us beyond our limits, we shall confine ourselves to the improved scale of the present day, calculated for our own language, to which imperfections may be afterwards cast, so as to render the fount serviceable for any other. The Latin and French require more of c, i, l, m, p, q, s, u, and v, than the English; but until such sorts become really necessary, it would be useless to cast them. When a work is completed for which such extra sorts were required, it may then be proper, to prevent their remaining inactive, to cast up to them—by which means the fount will receive considerable increase when employed again in the English language.

A perfect scale is of the greatest importance and utility, as it, in a great measure, does away the necessity of casting imperfections, which too often differ from the original fount, sometimes in thickness, in height, or depth, when cast in moulds of the same body, but not of the same cut. This is a serious evil, and particularly destructive to a fount of letter. It reflects discredit not only on the founder but the printer, in the opinion of those unacquainted with the profession, who consider every defect as an error of the press. A careful compositor has it in his power to detect those defects; but when it is considered that such discovery will perhaps retard him in the pursuit of his business, it cannot be a matter of much surprise, that he should permit them to pass without observation. It should

be an invariable rule with master printers to examine imperfections before they go into the hands of the compositor, that by timely precaution they may prevent not only the injury to their founts, but the destruction of that symmetry in the lining of the letter, so essential to the beauty of printing. Good press-work will immediately point out the most trivial defect in this respect.

The system of hurrying works through the press, lately adopted by most booksellers, by dividing them among a variety of houses, is a great enemy to uniformity. In some instances that expedition may be absolutely necessary; but care should be taken that the founts completely correspond. It is not unusual to discover, in volumes so divided, one to contain more lines in a page than another; or, if the number of lines are the same, the page differs in length;—or should the type agree in depth, it is more than probable that it varies in thickness;—all of which proclaim a glaring want of uniformity, without which the typographic art cannot be said to have arrived to a great degree of perfection.

But the complaint does not rest so much against dividing works by volumes, as by proportioning a single volume into more houses than one. Expedition can scarcely justify this practice, from the inconvenience arising, not only to the printer, but to the public. An instance lately occurred of a work so divided (a prayer-book), where the first part was printed with long s's, and the last part with round, independent of other deviations; this is a sufficient proof that the system is injurious; and it is to be hoped, that this rage for extraordinary expedition will not long continue. But, to return:—

Letter founders call 3000 lower case m's a bill, and proportion all other sorts by them; so that a

whole bill of Pica makes 500 lbs.—1500 m's or half a bill, 250 lbs.

Formerly a fount of letter, weighing 500 lbs. was considered a good-sized fount; but now, so much has printing increased, that double that weight barely acquires the appellation.

If we look into the primitive state of Printing, we find that the professors of the art were obliged to have large founts of letter, on account of printing their works in quires of three, four, and even five sheets; whereas now, a fount of half that force will serve to do business more expeditiously, by printing in single sheets; so that very large founts are not of equal advantage to every printer; but only such as are sure to do long and voluminous works; considering that the larger the fount is, the greater are the imperfections: which, were they always to be cast up to, would make a fount of enormous weight, yet not perfect at last. Neither is it of service to letter, if one part is kept long out of use, while another part is worked briskly round. Sometimes a very large fount makes negligent correctors, when they know how far a fount goes, and therefore give themselves no concern about returning proofs, till they find that the whole fount is set up, and that the workman can go no farther. In such case the intention of having large founts is frustrated, and the compositor as well as pressman are prejudiced in their endeavours; whereas a tolerable large fount of letter, and a regular dispatch of proofs, is beneficial to master and men. Yet ordinary founts will not always suit printers that are known to be capable of giving work a quicker dispatch than usual, on account of their being provided with extraordinary founts of letter, and employing a number of hands; which, though attended with very great charges to the

printer at first, nevertheless, make amends for them, provided those heavy bodies of letter are always kept in motion. In the mean time, every printer ought to consult with himself about the scope and nature of the business which he sets out for, and have his letter cast accordingly: for it can hardly be supposed that he who shall have particular occasion for large letter only, should lay his money out upon such founts as are required for book-work, which ought to be large and complete, if the owner of them proposes to signalize himself for being furnished with ample materials for expediting work of every description.*

We shall now give what is reckoned by the founders a regular bill, perfect in all its sorts—for though what is termed a common fount has neither small capitals, accented letters, nor Italic, yet so rarely is a fount of the present day ordered without them, that we rather leave it to the option of the printer to omit them in this scale on giving his order, should he be so inclined, and proportion their weight to the other sorts, than not to present the bill in as complete a form as possible:—

* Upon this subject, we find that a fount of English, at Paris, which formerly set up about twelve sheets of a Surgeon's Case, in 4to. was much admired on account of its extraordinary weight; this observation drew the following remark from one of our predecessors:—

"But, how much would their admiration be heightened, were they to see here several founts larger than that: and one in particular of the late Mr. Richardson's, which sat up above thirty sheets in folio, of 77 lines long, and 45 m's wide, before imperfections were cast to it, which must be very considerable, in course, and have caused the fount to several sheets more."

Either of the above amazing founts (as then considered) would, at the present day, be thought of a trifling nature; in truth, most of the respectable printing-offices in London can boast the possession of founts of various sizes, which would far eclipse the greatest wonder noticed above; one example, we trust, will be sufficient to prove our assertion: what would they now think, if they saw Messrs. Hansards' founts of English and Pica, the former of which, we are informed, will set up between three and four hundred sheets of foo scap folio, and that the latter will extend to nearly six hundred sheets of the above: they have also most of the other founts of very considerable extent.

A Bill of Pica Roman, and Half a ROMAN.

a...8500	ff....400	,...4500	A...600	a....300	
b...1600	fi....500	;....800	B...400	b....200	
c...3000	fl....200	:....600	C...500	c....250	
d...4400	ffl...100	2000	D...500	d....250	
e...12000	ffi...150	-...1000	E...600	e....300	
f...2500	æ...100	'....200	F...400	f....200	
g...1700	œ....60	!....150	G...400	g....200	
h...6400	1510	'....700	H...400	h....200	
i...8000	à....200	)....300	I...800	i....400	
j....400	è....100	[....150	J...300	j....150	
k....800	ì....100	*....100	K...300	k....150	
l....4000	ò....100	†....100	L...500	l....250	
m...3000	ù....100	‡....100	M...400	m....200	
n...8000	á....100	§....100	N...400	n....200	
o...8000	é....250	‖....100	O...400	o....200	
p...1700	í....100	¶....60	P...400	p....200	
q....500	ó....100	109,60	Q...180	q....90	
r...6200	ú....100	1...1300	R...400	r....200	
s...8000	à....200	2...1200	S...500	s....250	
t...9000	è....200	3...1100	T...650	t....326	
u...3400	ì....100	4...1000	U...300	u....150	
v...1200	ò....100	5...1000	V...300	v....150	
w..2000	ù....100	6...1000	W...400	w...200	
x....400	ä....100	7...1000	X...180	x....90	
y...2000	ë....100	8...1000	Y...300	y....150	
z....200	ï....100	9...1000	Z....80	z.....40	
&...200	ö....100	0...1300	Æ....40	æ....20	
107,100	ü....100	10,900	Œ....30	œ....15	
	ç....100		10,660	5331	
	2550				

*Bill of Italic, weighing 800lbs.**

ITALIC.

a	1700	*ff*	80	*á*	20	*A*	120
b	320	*fi*	100	*é*	50	*B*	80
c	600	*fl*	40	*í*	20	*C*	100
d	880	*ffl*	20	*ó*	20	*D*	100
e	2400	*ffi*	30	*ú*	20	*E*	120
f	500	*æ*	20	*à*	20	*F*	80
g	340	*œ*	12	*è*	20	*G*	80
h	1280		302	*ì*	20	*H*	80
i	1600		160	*ò*	20	*I*	160
j	80	;	120	*ù*	20	*J*	60
k	160	,	40	*â*	40	*K*	60
l	800	!	30	*ê*	40	*L*	100
m	600	(	60	*î*	20	*M*	80
n	1600		410	*ô*	20	*N*	80
o	1600			*û*	20	*O*	80
p	340			*ä*	20	*P*	80
q	100			*ë*	20	*Q*	36
r	1240			*ï*	20	*R*	80
s	1600			*ö*	20	*S*	100
t	1800			*ü*	20	*T*	130
u	680			*ç*	20	*U*	60
v	240				490	*V*	60
w	400					*W*	80
x	80					*X*	36
y	400					*Y*	60
z	40					*Z*	16
&	40					*Æ*	8
	21,420					*Œ*	6
							2132

Spaces.

Thick	18000
Middle	12000
Thin	8000
Hair	3000
m Quads.	2500
n Quads.	5000
	48,500

* Large quadrats are not included in this bill; the various sizes may be estimated at 50lbs.

N. B. Although we have given this scale for the proportion of each sort, still we must observe, that founders differ also in this respect, which is another proof of the want of a uniform system in their business.

A plan has been suggested, and we believe acted upon by some master printers, in ordering a fount of letter---to desire a certain portion of it to be sent home complete---while the other part they reserve to be cast afterwards, as imperfections---by, which means they are enabled to ascertain the state of their fount in an early stage, and make it perfect without going beyond the weight they originally intended, or incurring additional expense.

This mode carries with it strong grounds for recommendation; but we shall leave it to the judgment of those who may think it worthy their attention, as we have not seen it carried into execution. We mention it, conceiving it essentially necessary, in a work of this nature, to let no observation pass unnoticed that may, in the remotest degree, be considered useful or important.

Printers divide a fount of letter into two classes.

1. The upper case } sorts.
2. The lower case }

The upper case sorts are capitals, small capitals, accented letters, figures and references.

The lower case consists of small letters, double letters, points, spaces, quadrats, &c. each of which we shall treat of under distinct heads.

CAPITALS.

THE use of capitals has been considerably abridged of late years; and the antiquated method of using them with every substantive, and sometimes even with verbs and adverbs, is now discontinued. They are considered, in the present day, as necessary only to distinguish proper names of persons, places, &c. There are, however, some particular works in which authors deem it essential to mark emphatical words with a capital; in such cases, and there can be no

general rule to guide the compositor, we would recommend the author always to send his copy properly prepared in this particular, to the printer, or he will become liable to the charge the compositor is allowed to make for his loss of time in following his alterations. The method of denoting a capital, or words of capital letters in manuscript, is by underscoring it with three distinct lines.

Capitals, of whatever body, if they are well proportioned, look well in titles, inscriptions, &c. but it requires taste and judgment in the compositor to display them to advantage.

The mode of spacing lines set in capitals is now laid aside: in some particular instances it may be necessary, in order to prevent two lines from being the same length in a title-page.

SMALL CAPITALS.

SMALL CAPITALS are in general only cast to Roman founts,* and are used for the purpose of giving a stronger emphasis to a word than can be conveyed to it by its being in Italic.

They are likewise used for running heads, heads of chapters, &c. instead of Italic, according to the fancy of the printer.—The first word of every section or chapter is generally put in small capitals, after a small neat cock-up letter. They are likewise of considerable service in the display of a title-page, particularly in setting the catch lines.

The small capitals C, O, S, V, W, X, Z, so closely resemble the same letters in the lower case,† as to

* Some of our founders cast Italic Small Capitals to most, if not the whole of their founts.

† Smith has suggested, in order to prevent the mixture of the above with the lower-case, that they should either be cast somewhat thicker, or have a different nick: in support of which, he mentions having seen a letter at Dantzic, which had the nick on the upper-case sorts placed higher than that on the lower.

require particular care to prevent their mixing, as the difference can only be ascertained by their being cast thicker than the others.

In manuscript, small capitals are denoted by having two lines drawn under them.

ACCENTED LETTERS.

THOSE which are called accented by printers, are the five vowels, marked either with an

Acute	á é í ó ú
Grave	à è ì ò ù
Cirumflex	â ê î ô û
Diæresis	ä ë ï ö ü
Long	ā ē ī ō ū
Short	ă ĕ ĭ ŏ ŭ

Those who call accented letters all that are of a particular signification, on account of their being distinguished by marks, reckon the French ç, the Spanish ñ, and the Welch ŵ and ŷ, in the class of accented letters, though not vowels. As the longs and shorts are used only in particular works, they are not cast to a fount of letter unless ordered.

VOWELS MARKED WITH AN ACUTE.

THE five vowels marked with acutes over them, it is probable, were first contrived to assist the ignorant monks in reading the church service, that by this means they might arrive to a proper and settled pronunciation in the discharge of their sacerdotal functions; and, by accenting the vowels afterwards in printed books, instruct others to conform to them in giving words their proper sound; which, though it seems to be an ancient institution, is still observed in France, where the vowels in the Latin columns of their common prayer-books are accented, in order to support an uniformity in the

pronunciation. Some of our English etymologists have adopted the same method in their dictionaries, by placing an accent over, or next to the vowel which governs the sound and pronunciation of a word; but as authors differ in this point, it will be difficult to accomplish their design, unless they can first agree to uniformity in accenting, and afterwards find out an expedient to establish their joint conclusion. The French have done this most effectually, by accenting the Latin in their mass-books, as the most proper vehicle to make the pronunciation of the Roman church-language more universal—an instance not unworthy of imitation in other nations. How essentially would such a plan of accenting enhance the beauty and sublimity of the church service, which is too frequently mangled and mutilated by inaccurate and injudicious readers.

Among the acuted vowels, the é is the most considerable with the French, by whom it is used and abused according to the fancy of the writer, though it is confined to rules as well as other letters of which the following are the most general:—

Where it sounds open and clear, at the end of words, as in *bonté, santé, pieté.*

Where it sounds sharp, and the voice is to be raised, as in *prédecesseur, prédestiné.*

In adjectives or participles of the feminine gender, which end in two e's, as *une maison bien reglée.*

In preterits of the first conjugation, as, *j' ai pensé, j' ai aimé, j' ai desiré.*

Where it takes off the sound of the s after it, as in *échevin, écaille, écarter, témoigner,* instead of writing *eschevin, escaille, escarter, tesmoigner;* which is become obsolete.

Thus we find, that besides the e, acuted letters are of no use in French orthography; and none of

them in the English, save that the acuted í ó ú, may, upon occasion, serve in etymological dictionaries among small capitals, and save kerning them; which, however, cannot be done to A and E. Those *must* be kerned, or otherwise cut and cast, with an accent over them, on purpose, unless it is thought passable to place the accent at the side of a vowel; in which case the former ought to be very thin, especially if small capitals are cast to bear off each other.

VOWELS MARKED WITH A GRAVE.

THE *a* marked with a grave is used in several other languages besides the Latin and French, though we shall confine ourselves to these two, as being the principal languages which prove beneficial to our English presses. The *a* with a grave is used, in Latin,

When it stands for a word by itself, as *à patre, à matre.*

In adverbs, to distinguish them from adjectives, or prepositions of the same termination, as *infrà, suprà,* adverbs—*infra, supra,* prepositions.

è has a grave when it stands for a word by itself, as *redit è scholâ.*

è, ò, ù, have a grave to distinguish adverbs and conjunctions from adjectives and prepositions of the same termination, as *doctè, meritò, adversùs, secundùm,* adverbs—*docte, merito, adversus, secundus, secunda, secundum,* adjectives—*verò,* conjunction; *vero* adjective.

In French,

a has a grave in *là,* when it is an adverb, as *il est logé là.* But *la* has no grave when it denotes the article of the feminine gender; as *la femme, la sœur.*

a has a grave when it is a particle before the dative case, as *j' donné à lui, il a dit à lui.*

Also, when it stands before the infinitive mood, as *facile à faire, propre à manger.*

Likewise, when it stands before the names of places, as *il est allé à Paris, il s'en va à Lyons.*

a has a grave in the word *voilà.*

But *a* has no grave where it comes after a *y*, as *il y a un Dieu, il y a des hommes sçavans.*

Neither has *a* a grave when it makes a word of itself, but at the same time derives from the verb *avoir*, to have; as *il a bon tems à se promener*, where the first *a* is not accented, because it derives from *avoir;* whereas the other *a* has a grave, because it stands before the infinitive mood.

The *e* has a grave in words whose last syllable has an open and sharp sound, as in *excès, procès, succès, exprès*, and the preposition *dès*, to distinguish it from *des*, which denotes the genitive of the plural number. But some put an acute in the above words, instead of a grave, and allow either to be right.

u has a grave in the word *où*, where it means *where*, as *où êtes vous?*

But *u* has no grave when it stands for *or*, as *souhaitez vous de boire du vin ou de la bière?*

Neither has *u* a grave, when it stands for *either*, as *je partira ou pour Paris ou pour Dieppe*—I shall go either to Paris or to Dieppe.

In English, *e* is marked with a grave in poetry, to prevent its being taken for the *e* feminine, which, not being sounded, would shorten the measure of the verse, were the *e* not marked to be pronounced; as in these lines, *viz.*—

Cithæron, Dindymè, in ashes mourn,
And Mycalè, and proud Olympus, shine.
Bœotia for her Dircè seeks in vain.

VOWELS MARKED WITH A CIRCUMFLEX.

THE circumflexed vowels are used in the French more than in the Latin language.

In Latin,

á and *í* are chiefly made use of.

a is circumflexed where it distinguishes the ablative from the nominative case, of the first declension, as nominative *musa*, ablative *musâ*, unles a preposition stands before it; which shews the case without any other sign or distinction.

Also, where the preterperfect of the first conjugation is contracted, as *amâsti* for *amavisti*.

In French,

a is circumflexed where it retrenches the *s* after it, as *château*, *châtiment*, instead of formerly writing *chasteau*, *chastiment*.

e, *i*, *o*, *u*, are circumflexed where they have an *s* after them, which they shew to be cut off, by assuming a circumflex; as does

ê in *fête*, *Evêque*, *être*, *êtes*, and many others.

î in *maître*, *epître*, *connoître*, &c.

ô in *Apôtre*, *côte*, *vôtre*, &c.

û in *brûler*, *coûtume*, *coûteau*, *soûtenir*, &c.

But *s* maintains its place in *pasteur*, *gestes*, *distribuer*, *posterité*; and in all other words where the *s* after a vowel sounds clear and open; and where retrenching it would occasion a vitiated pronunciation.

VOWELS MARKED WITH A DIÆRESIS.

THE vowels which are marked with two dots, or a diæresis, over them, are properly but three, ë, ï, ü, though ü and ö ought not to be omitted in casting. Their use is, to separate one vowel from another, and to prevent their being taken for diphthongs; but the rules for placing the diæresis being as unsettled as many others relating to accented letters, we will not

presume to fix upon any, but recommend it to authors to mark them in their copy, according to their own, or their favourite grammarian's fancy, since it is not required of a compositor to concern himself about matters that are in dispute among pedagogues. In the mean time, particular care ought to be taken in poetical works not to omit putting the diæresis where the dividing of two vowels makes two different syllables; otherwise, two vowels together may be taken for a diphthong, and make the verse fall short of its measure, as might have happened to the lines underneath, had no diæresis been used to prevent it, viz.

The swans that in Cäyster's waters burn.
In flames Caïcus, Peneus, Alphëus, roll'd.
The Tanaïs smokes amid his boiling wave.

SHORTS AND LONGS.

SHORTS, as well as longs, are invented to shew the accent, sound, and quantity of syllables. They are chiefly used in classical dictionaries, and in scanning of Latin verses, after their syllables have been brought into feet, and marked with shorts and longs according to the measure of the verse. Thus, an adonic verse has two feet, an hexameter six, a pentameter five feet; which consist either of two or three syllables. Two syllables, both long, are called a *spondee*; a foot, whose first syllable is long and the last short, is a *trochæus*; and three syllables, viz. the first long and the other two short, is a *dactyle*.

THE FRENCH ç, SPANISH ñ, AND WELSH ŵ AND ŷ.

THE c *à la queue*, or c *with a tail*, is a French sort, and sounds like ss, when it stands before a, o, u, as in *ça, garçon*; whereas a common c, before the *same* vowels, is pronounced like a k. To make a tail to a capital C, the figure 5, of a small size, with

the upper stroke cut off, is not improperly used, or a note of interrogation with the dot taken away.

The n marked with a stroke over it, is used in the Spanish, and pronounced like a double n, or rather like ni; but short and quick, as in España. It is a sort which is used in the middle of words, but very rarely at the beginning.

In the Welch language, ŵ and ŷ, as well as the other circumflexed letters, are used either to direct the pronunciation, as in ynghŵydd, in presence; ynghŷd, together: or else, for distinction sake, as, mwg, a mug; mŵg, smoke; hyd, to, until; hŷd, length.

Having shewn, in as brief a manner as possible, the use made of accented letters, though we could have wished to have taken less notice of some, which are ranked among the obsolete sorts invented by sholastics, as signs and symbols, to impress upon their pupils the rudiments of grammar; we shall conclude by recommending to those authors who still maintain their necessity, in works designed for the learned, to be particular in sending their manuscript properly accented, according to their fancy—as the compositor should not deviate from his copy, or make alterations, without being paid for his loss of time.

NUMERAL LETTERS.

EVERY letter in the alphabet was used to denote some number by the Greeks and Orientals, and each letter denoted a less or greater number, as it was nearer or more remote from the first letter in their alphabetical order; and no letter, which in the order of the alphabet stands after another, ever denoted a number less than the letter that stands before it. If the Romans, who derived their letters originally from the Greeks, had derived also their numeration by letters, it is in the highest degree probable, that these

particulars would have been the same in both; but as not one third of the Roman letters are numerals, so neither is the numeral value of those that are so, more or less, according to their place in alphabetical order; because D and C, which stand among the first letters of the alphabet, and M and L, whose station is in the centre, are of much greater numerical value than X and V, which are near the end.

But it has been supposed that the Romans used M to denote 1000, because it is the first letter of Mille, which is Latin for 1000; and C to denote 100, it being the first letter of Centum, the Latin term for 100. Some also suppose, that D being formed by dividing the old M in the middle, was therefore appointed to stand for 500, that is, half as much as the M stood for when it was whole; and that L being half a C, was, for the same reason, used to denominate 50. But upon what just principle can any person imagine, that 1000 and 100 were the numbers which letters were first used to express? And what cause can be assigned why D, the first letter in the Latin word Decem, 10, should not rather have been chosen for 500, because it had a rude resemblance to half an M? But if these questions could be satisfactorily answered, there are other numerical letters which have never yet been accounted for at all. We therefore think these considerations render it probable, that the Romans did not, in their original intention, use letters to express numbers at all; the most natural account of the matter appears to be this—

The Romans probably put down a single stroke I, for one, as is still the practice of those who score on a slate, or with chalk; this stroke they doubled, trebled, and quadrupled, to express two, three, and four, thus II, III, IIII. So far they could easily number the minums or strokes with a glance of the

eye; but they found, that if more were added, it would be necessary to number the strokes one by one; for this reason, when they came to five, they expressed it by joining two strokes together in an acute angle, thus V, which will appear the more probable, if it be considered that the progression of the Roman numbers is from five to five, that is, from the fingers of one hand to the fingers of the other. Ovid has touched upon the original of this in his *Festorum*, lib. iii. and *Vitruv.* lib. iii. c. 1, has made the same remark.

After they had made this acute angle V, for five, they then added single strokes to the number of four, thus VI, VII, VIII, VIIII, and then, as the minums could not be further multiplied without confusion, they doubled their acute angle by prolonging the two lines beyond their intersection, thus X, to denote two fives, or ten. After they had doubled, trebled, and quadrupled this double acute angle, thus XX, XXX, XXXX, they then, for the same reason which induced them to make a single angle first, and then to double it, joined two single strokes in another form, and instead of an acute angle, made a right angle L, to denote fifty. When this was doubled, they then doubled the right angle, thus Ⅼ, to denote one hundred, and having numbered this double right angle four times, thus ⅭⅭ, ⅭⅭⅭ, ⅭⅭⅭⅭ, when they came to the fifth number, as before, they reverted it, and put a single stroke before it, thus Ⅾ, to denote five hundred; and when this five hundred was doubled, then they also doubled their double right angle, setting two double right angles opposite to each other, with a single stroke between them, thus ⅭⅠⅭ, to denote one thousand: when this note for one thousand had been repeated four times, they then put down ⅭⅠⅭ, for five thousand;

IↃↃↃ, for ten thousand; and IↃↃↃ, for fifty thousand.

That the Romans did not originally write M for one thousand, and C for one hundred, but square characters, as before shewn, we are expressly informed by Paulus Manutius; but the corners of the angles being cut off by transcribers for dispatch, these figures were gradually brought into what are now called numerical letters. When the corners of IↃↃ were made round, it stood thus, CIↃ, which is so near the Gothic ℳ, that it soon deviated into that character; so that IↃ having the corners made round, stood thus IↃ, and then easily deviated into D. I also became a plain C by the same means; the single rectangle which denoted fifty, was, without any alteration, a capital L; the double acute angle was an X; the single acute angle a V consonant; and a plain single stroke, the letter I. And thus these seven letters, M, D, C, L, X, V, I, became numerals.

As a further proof of this assertion, let it be considered, that CIↃ is still used for one thousand, and IↃ for five hundred, instead of M and D; and this mark, ℳ, is sometimes used to denote one thousand, which may easily be derived from this figure, IↃↃ, but cannot be deviations from, or corruptions of, the Roman letter M.

The Romans also expressed any number of thousands by a line drawn over any numeral less than one thousand; thus, $\overline{V}$ denotes five thousand, $\overline{LX}$ sixty thousand: so likewise $\overline{M}$ is one million, $\overline{MM}$ two millions, &c.

Upon the discovery of printing, and before capitals were invented, small letters served for numerals, which they have done ever since; not only when the Gothic characters were in their perfection,

but even after they ceased, and Roman was become the prevailing letter. Thus, in the time of printing in Gothic characters, i b x l c d m were, and are still, of the same signification with capitals, when used as numerals. But here it should be observed, that the capital J is no numeral letter, though the lower-case j is as often and as significantly used as the vowel *i*, especially where the former is used as a closing letter, in ij iij bj bij biij dcij, &c. though it is as right not to use j's at all, unless it were out of respect to antiquity; for in Roman lower-case numerals, which are of more modern date, the j is not regarded, but the i stands for a figure of 1, wherever it is used numerically.

ARITHMETICAL FIGURES.

THE above figures are nine in number, besides the cypher, or nought, which, though of itself of no signification, makes a great increase in the figure to which it is joined, either singly or progressively.

Figures require a founder's particular care to cast them exactly an n-thick, and to a true parallel, as the least deviation, where a number of them come together in table-work, destroys their arrangement, and causes an inconvenience in the justification, which cannot be altered without considerable loss of time, and frequently baffles the skill of the most ingenious compositor.

The excellence of figures does not consist in their having soft and fine strokes, but rather in such circles and lines as bear a proportion with the strength of the face. The improvement which has recently taken place, and is now generally adopted, of casting them to a fuller face than formerly, must be allowed to add considerably to their appearance, and to the beauty of the work in which they may be used.

Printers, at one time, thought it a great impropriety to use erect figures in Italic matter, judging that the obliquity of that character would be intercepted by them, and therefore had figures cast of the same inclination; but this peculiarity is entirely laid aside in England, though it still prevails in some parts abroad.

SCRATCHED FIGURES.

THOUGH scratched figures are at present not used with us, yet, as their existence is not entirely done away, it might be construed an omission were we not to notice them, and specify in what particular they were formerly thought of utility.

They were used in that species of arithmetic called division, and are still considered in Germany, and other foreign parts, as essentially necessary; the dividing and divided figures being scratched as soon as they have been adjusted by subtraction and multiplication.

Having made some observations upon the numeral letters of the Romans, and on modern arithmetical figures, we will shew the manner adopted by the Greeks and Hebrews, of numerating in their characters, as well for the satisfaction of the curious, as for the instruction of those who may have occasion to become acquainted with them.

GREEK NUMERALS.

INSTEAD of seven letters used by the Romans, the Greeks employed their whole alphabet, and more than the alphabet; for they contrived three symbols more, and made their numerals to consist of twenty-seven sorts, which they divided into three classes; the first, to contain units; the second, tens; and the

third, hundreds. Accordingly the first class consists of the nine following numerals, viz.

α	β	γ	δ	ε	ϛ	ζ	η	θ
1	2	3	4	5	6	7	8	9

In this class, it may be observed, the Greek ſt, or *Stigma*, is made an auxiliary numeral letter, to stand for 6, and is callod *ἐπίσημον*.

The second class includes the nine numerals which express tens, viz.

ι	κ	λ	μ	ν	ξ	ο	π	ϟ
10	20	30	40	50	60	70	80	90

In this second class, a particular symbol, resembling much an inverted Hebrew *lamed*, serves to express 90, though others use an *η* in the room of it, to which, as well as the former, they give the name of *koppa*.

The third class contains the numerals which carry hundreds with them, and are

ρ	σ	τ	υ	φ	χ	ψ	ω	ϡ
100	200	300	400	500	600	700	800	900

In this class the additional symbol which stands for 900, is a compound of a *pi* and a *sigma*, for which reason it is called *sanpi;* though others represent it by a mark like this, ϡ.

To raise numbers to thousands, nothing else is required than to begin the alphabet again, and to mark each letter with a dot, or an acute under it, in the following manner:

1000	2000	3000	6000	10,000	100,000
α′	β′	γ′	ϛ′	ι′	ϟ′

Still higher numbers are noted with double acutes under them; thus,

1,000000	2,000000	3,000000, &c.
α″	β″	γ″

The manner of joining these numerals may be learned from the following exemple:

11	23	104	1005	1754
ια	κγ	ϛδ	ϙε	ϙψνδ

Besides the above manner of counting by lower-case letters, the Greeks make choice of six capitals to express sums by,

I	Π	Δ	H	X	M
1	5	10	100	1000	10,000

Among the numeral letters, the *pi* is peculiar, for admitting the *delta*, *eta*, *chi*, and *mu*, into its centre, and for giving such an incorporated letter five times the value which it has of itself; as,

[Δ] 5 times 10 are 50.
[H] 5 times 100 are 500.
[X] 5 times 1000 are 5000.
[M] 5 times 10,000 are 50,000.

To these inclosed numerals any part and quantity may be added, according to the value which is contained in each of the six numeral letters exhibited in the preceding page.

It should be observed, that when a numeral letter is marked at the top, it shews it to be a fraction; as,

One-fourth.	One-fifth.	Five-eights.
δ'	ε'	ε'η'η'

HEBREW NUMERALS.

THE manner of counting by letters is derived from the Hebrews, who for that purpose made use of the letters of their alphabet, without the assistance of other symbols. Accordingly, the letters which express units, are,

ט	ח	ז	ו	ה	ד	ג	ב	א
9	8	7	6	5	4	3	2	1

The following contain tens, viz.

י	כ	ל	מ	נ	ס	ע	פ	צ
10	20	30	40	50	60	70	80	90

And these underneath, hundreds, viz.

ק	ר	ש	ת	ך	ם	ן	ף	ץ
100	200	300	400	500	600	700	800	900

In joining Hebrew letters for numbers, it is a rule to put the letter of a greater signification before a character of a less; as,

רמו	קה	צג	לא	יב
266	105	93	31	12

The numeral signification of the five final letters is sometimes expressed by compounds; as,

תתק by ץ	תת by ף	תש by ן	תר by ם	הק by ך
900	800	700	600	500

א with an acute over it, stands for 1000: but where the contents of a sum amount to above 1000, the letter to the right hand shews the order of thousands, and the א is doubly accented; thus

״	״	״
בא	גא	הא
2000	3000	8000

And if hundreds are added to them, the double-accented א is omitted, and only a common letter put at the beginning, to intimate the order of thousands; thus,

בק	דש	ות	זתש	חרג
2100	4300	6400	7700	8203

In printed books and letters the Jews date their years (after the creation of the world) without putting an ה at the beginning, to imply 5000, and only set down the hundreds, and parts, of which their years consist above the thousands. But in this case

they seldom forget to put the letters לפק after the date, which is to inform the reader, that the date thus abridged, is according to the minor supputation.

In writing 15, the Jews choose to do it by טו, instead of יה, because these last letters are used in Jehovah; and therefore they think it a profanation of the Lord's name, if the said letters should be used for numerals. Neither do they express 16 by יו, but make use of טז, because the two letters, jod and vau, are likewise comprehended in the word Jehovah.

REFERENCES.

REFERENCES are all such marks and signs as are used in matter which has either side or bottom notes, and serve to direct the reader to the observations which are made upon such passages of the text as are distinguished by them, and demand a reference of the same likeness to be put to the notes, by which the matter is illustrated, or otherwise taken notice of.

References which are used in works with notes to them, are variously represented, though oftener by letters than other characters. Accordingly, some put common letters between parenthesis; thus *(a)*, *(b)*, *(c)*, &c. Others, again, choose to see them betwixt crotchets, as [*a*], [*b*], [*c*], and so on to the end of the alphabet; instead of these, some begin the notes of every page with *(a)*, in which they are as right as the former; and have this advantage besides, that the order of references is not so liable to be interrupted as by going through a whole alphabet. Were we authorised to vary from the customary mode of practise, we should recommend literal references to begin with every even page, if it has notes; and to carry them no further than to the

last note in the opposite uneven page; by which means the order of the references would appear at one view, and any irregularity in them rectified without much trouble.

Instead of letters, whether capital or lower-case, figures are used in the same manner, and also with equal propriety; for the one as well as the other are of like signification, when used for the same purpose:—but the references which look the neatest, besides being the most proper, are superior letters, or else superior figures; for both were originally contrived and intended to be employed in matter that is explained by notes, whether by way of annotations, quotations, citations, or otherwise. Nevertheless, we observe that superior letters are not used upon every occasion, but chiefly in large and lasting works, which have sometimes more than one sort of notes, and therefore require different references; in which case not only superior letters, but also such marks are used as never were designed to serve for references. Another reason why superior letters are not used upon all occasions, is, that they are often objected to by gentlemen who choose to read copious notes first, and then refer to the text, where they fancy superior letters not conspicuous enough to be readily discovered. And, indeed, superiors of the smallest size are not only inconvenient to the reader, but also troublesome to the pressman, who is ambitious to make them come off clear, notwithstanding their disadvantageous situation. But, to abide by the title of this article, what are called references by printers, are the following:—

Asterisk *	Double Dagger ‡	Parallel . . ‖
Dagger . †	Section . . . . . §	Paragraph ¶

The above are the names and figures which founders reckon among the points, and are denomi-

nated references by printers; these characters were designed to serve for other purposes than those to which they have been applied, as will appear from their respective functions.

1. The Asterisk is the chief of the references, and presents itself most readily to the eye, on account of having its figure on the top, and leaving a blank below, which makes it a superior.

In Roman church-books, the Asterisk divides each verse of a psalm into two parts; and marks where the responses begin: which in our Common Prayer Books is done by placing a colon between the two parts of each verse.

They are sometimes used to supply the name of a person that chooses to pass anonymous. They also denote an omission, or an hiatus, by loss of original copy; in which case the number of asterisks are multiplied according to the largeness of the chasm; and not only whole lines, but frequently whole pages, are left blank, and marked with lines of stars. ...

In satyrizing persons in pamphlets and public papers, the asterisk is of great service; for it is but putting the first letter of a person's name, with some asterisks after it, and ill-natured people think they may characterize, and even libel, their betters, without restriction. Metal Rules also serve for the above purposes as well as Asterisks.

2. The Dagger, originally termed the Obelisk, or Long Cross, is frequently used in Roman Catholic church-books, prayers of exorcism, at the benediction of bread, water, and fruit, and upon other occasions, where the priest is to make the sign of the cross; but it must be observed, that the long cross is not used in books of the said kind, unless for want of square crosses, (✝), which are the proper symbols for the before-mentioned purposes;

and are used besides in the Pope's briefs, and in mandates of archbishops and bishops, who put it immediately before the signature of their names. But the square cross is not reckoned among references of which we are speaking; whereas, the long cross answers several purposes; for, besides serving instead of a square cross, it also answers for a signature to matter that has been either omitted, or else added, and which is intercalated after the work is gone beyond the proper place for it. But the chief use which is made of the dagger, is by way of reference, where it serves in a double capacity, viz. the right way, and inverted.

3. The Double Dagger is a mark crowded in to make one of the improper references.

4. The Parallel is another sign which serves for a reference, and is fit to be used either for side or bottom notes.

5. The sign which implies the word Section, is a sort likewise seldom employed, because in a work which is divided into chapters, articles, paragraphs, sections, or any other parts, they are commonly put in lines by themselves, either in large capitals, small capitals, or Italic, according to the size of the work. But the sign of section is sometimes used in Latin notes, and particularly such as are collected from foreign books, which generally abound with citations, because their introduction induces the reader to account his author very learned.

6. The Paragraph is a mark which formerly was prefixed to such matter as authors designed to distinguish from the mean contents of their works; and which was to give the reader an item of some particular subject. At present, paragraphs are seen only in Bibles, where they shew the parts into which a chapter is divided, and where its contents

change. In Common Prayer Books, paragraphs are put before the matter that directs the order of the Service, and which is called the Rubric; because those lines were formerly printed in red. Otherwise it is a useless sort, and unfit to serve for a reference, as long as there are others which have not that antique appearance.

Thus we have shewn, that the symbols which are used as references, were designed for quite different purposes. We are therefore of opinion, that it would not have been one of the least improvements, had some other marks been devised which should have appeared in a more becoming shape than the above references, and more perspicuous than superiors of the least size. *

LOWER-CASE SORTS.

HAVING already considered the lower-case alphabet, it will be unnecessary to dwell long on this head, we shall therefore merely notice those sorts which have not been already treated on. Those termed lower-case sorts are; the small letters of the alphabet, double letters, points, the crotchet and parenthesis, spaces and quadrats. Of these i, v, x, l, c, are numeral letters, and are generally used in notes; the d, or m, seldom appear in lower-case numerals, though their power is not inferior in calculation to capitals, as they are governed by the same rules.

* It will be seen by the scheme of the old cases, that the small k, sb, sk, and st, (when long s's where used,) held situations in the upper-case; but, according to our improved scale, the above are abolished, as well as the transposition of some others into the lower-case, in order to admit room for many additional and useful sorts.

POINTS.

THEY consist of a comma, semicolon, colon, period or full-point, note of interrogation and note of admiration.

Points are not of equal antiquity with printing, though, not long after its invention, the necessity of introducing stops or pauses in sentences, for the guidance of the reader, brought forward the colon and full-point, the two first invented. In process of time, the comma was added to the infant punctuation, which then had no other figure than a perpendicular line, proportionable to the body of the letter; these three points were the only ones used till the close of the fifteenth century, when Aldus Manutius, a man eminent for the restoration of learning, among other improvements in the art of printing, corrected and enlarged the punctuation, by giving a better shape to the comma, adding the semicolon, and assigning to the former points a more proper place; the comma denoting the smaller pause, the semicolon next, then the colon, and the full-point terminating the sentence. The notes of interrogation and admiration were not introduced till many years after.

These points are allowed to answer all the purposes of punctuation, though some pedantic persons have suggested the propriety of increasing them, by having one below the comma, and another between the comma and semicolon. So far are we from imagining that such an introduction will meet with encouragement, that we confidently expect to see the present number diminished, by the total exclusion of the colon, a point long since considered unnecessary, and now but seldom used.

Perhaps there never existed on any subject, among men of learning, a greater difference of

opinion than on the true mode of punctuation, and scarcely can any two people be brought to agree in the same method; some making the pause of a semicolon where the sense will only bear a comma; some contending for what is termed stiff pointing, and others altogether the reverse.

The want of an established rule in this particular is much to be regretted. The loss of time to a compositor, occasioned, often through whim or caprice, in altering points unnecessarily, is one of the greatest hardships he has to complain of in the progress of his profession.

Scarcely nine works out of ten are sent properly prepared to the press; either the writing is illegible, the spelling incorrect, or the punctuation defective. The compositor has often to read sentences of his copy more than once before he can ascertain what he conceives the meaning of the author, that he may not deviate from him in the punctuation; this retards him considerably. But here it does not end—he, and the corrector of the press, though, perhaps, both intelligent and judicious men, differ in that in which few are found to agree, and the compositor has to follow either his whim or better opinion. The proof goes to the author—he dissents from them both, and makes those alterations in print, which ought to have rendered his manuscript copy correct.

Some compositors do not possess so perfect a knowledge of punctuation as others; to such the hardship becomes greater; the loss of time to them will be very considerable. The author should, in the first instance, send his copy properly prepared to the press. He must be the most competent judge of the length and strength of his own sentence, which the introduction of a point from another might

materially alter, a circumstance not uncommon, as instances have occurred where a single point has completely reversed the meaning of a sentence.

The late Dr. Hunter, in reviewing a work, had occasion to censure it for its improper punctuation. He advises authors to leave the pointing entirely to the printers, as from their constant practice they must have acquired a uniform mode of punctuation. We are decidedly of this opinion; for unless the author will take the responsibility of the pointing entirely on himself, it will be to the advantage of the compositor, and attended with less loss of time, not to meet with a single point in his copy, unless to terminate a sentence, than to have his mind confused by commas and semicolons placed indiscriminately, in the hurry of writing, without any regard to propriety. The author may reserve to himself his particular mode of punctuation, by directing the printer to point his work either loosely or not, and still have the opportunity of detecting in his proofs whether a misplaced point injures his sentence. The advantage resulting from this method would ensure uniformity to the work, and remove in part from the compositor, a burthen which has created no small degree of contention.

Having considered it our duty to enter thus fully on a subject that so materially concerns the compositor, we will proceed to the points themselves; not with the view of laying down any rule, which we conceive impracticable, but for the purpose of explaining each in its proper order. An uniform and correct mode of pointing must be acquired by the compositor from practice and attention.

The comma, which is considered the first, from its requiring the shortest pause, its time being till you can reckon one, is more frequently used and

misapplied than any of the other points. Its unnecessary introduction often involves the reader in perplexity; and its omission blends sentences that should be kept distinct—and in unskilful hands, may pervert the meaning of the author, and render it ridiculous. The most acceptable mode seems to be what is termed *easy pointing*, which certainly has the advantage of not confusing the reader.

The comma, having the first place in every sentence, though, strictly speaking, it may be considered a junior stop, governs the order of all the others; therefore, the ready way to uniform pointing, is to acquire a perfect knowledge of this key to punctuation. *

Commas are used to denote extracts or quotations from other works, in dialogue matter, or any passages or expressions not original, by inverting two of them, and placing them before the passage quoted, and closing such passage with two apostrophes. These are termed inverted commas; and when used, a thin space is sufficient to keep them free from the matter. The method of running them down the sides to the end of the quotation, has been found inconvenient; particularly where a quotation occurs within a quotation, or a speech within a speech; the proper method of distinguishing which is, by placing a single inverted comma, and running one down the side till such extra quotation is concluded, which cannot well be done when the double commas are also run down. Such extra quotation

* It must be acknowledged, that all subjects are not pointed alike; as some require more stops than others. For instance, familiar discourses, or historical and narrative subjects, do not take up so many points as explanatory matter; and that, again, not so many as English Statute Law—but, fortunately for us, that mispointing is not of the same consequence with misnomer; otherwise, where would be the end of Law-quibbles!

to be concluded with a single apostrophe:* or should both quotations close together, put three apostrophes,† observing after the first to place a thin space.

Inverted commas owe their origin to Mons. Guillemet, a Frenchman, who, it may be supposed, was no friend to Italic, they being intended to supersede the use of that letter. As an acknowledgement for this improvement, his countrymen call them after his name.‡

A single comma inverted is used as an abbreviation to the word Mac, as in the instance of M'Gowan.

The Semicolon is allowed double the space of time for its pause to the comma, and may be consi-

* It has been observed, that double commas are frequently misapplied, when they are placed before an extract, or the substance of a passage, drawn out to corroborate the author's argument; in which case, such extracted matter would be best known by having single inverted commas before it, as verbal quotations are marked by double ones. Besides this proper use of the above, some authors choose to place the former before such of their own discourse as they would have particular notice taken of; though they might succeed in their aim, without using double commas, and as neither double or single ones are proper to distinguish an author's own matter from that before described, it has been suggested, that an inverted full point, or colon, or a comma standing in its proper position would answer the purpose better. By using either of the above signs, the reader would instantly be informed which is a verbal quotation, by being double comma'd; which a collected, or extracted one, by being single comma'd; and which an author's own select matter, by having one of the above points.

† The Germans, as well as the French, put the sign of quotation always according to the folio either of an even, or uneven page. Thus, in an even page, the former put two commas in their proper position, at the beginning of lines; but use them inverted in uneven pages; which double commas French founders cast in a piece, on the middle of their square metal—the proper situation for their particular signification. In the mean-time, the placing of inverted commas according to the folios of odd and even pages, witnesseth, that they formerly were not comprised in the measure of the work, but were justified, like marginal notes, abstracted from the matter; till it was thought prudent for every man to make his work as easy to himself as possible.

‡ The word Guillemets is ridiculed by the Germans, who have nick-named them gansse-augen, or geese-eyes; which, though it wants seriousness, is nevertheless an appellation by which they are known to both printers and writers in Germany.

dered an important point of punctuation; it enforces what has been illustrated by the comma, and allows the reader an opportunity to acquire a perfect view of the sentence, before it is terminated by the full point.

The colon, whose allowed time is till the reader can count three, has been superseded in almost every instance, either by the semicolon, ellipsis line, or metal rule, and in some cases by the comma; neither is its utility in figure-work any longer acknowledged.

The full point is used to terminate a sentence, and its pause is double the time allowed to the semicolon. It is also used in abbreviations, but then loses its effect as a full stop in the punctuation, unless at the end of a sentence. Some authors, enemies to the introduction of many points, will even omit the semicolon after an abbreviation, leaving the full point an indefinite pause to the discretion of the reader.

Full points are sometimes used as leaders in tables of contents, figure-work, &c. but dotted rules are much better for this purpose, from their uniform appearance, as they not only supply the place of full points and quadrats, but save considerable time in the composition.

The sign of interrogation needs not to be explained; for the very appellation tells us, that it is a mark which is used to shew where a question is proposed, that gives room for, or demands, an answer.

It is not only proper, but also requisite, that every interrogation or question should begin with a large letter, whether capitals are used in the matter, or not; according to the method which is observed in our Bibles, where, as well interrogatives as responses, besides the beginning of sayings, allocutions, &c. are intimated by a large capital letter.

The sign of admiration, or exclamation, likewise explains itself by its name, and claims a place where surprise, astonishment, rapture, and the like sudden emotions of the mind are expressed, whether upon lamenting or rejoicing occasions.

The sign of exclamation is put after the particles Ah! Alas! O! &c. though the last is not always of that force to be attended by the exclamatory symbol; but is softened by a comma, to enforce what follows, and to make the admiration more complete.

The admirative part of a paragraph, as well as of the interrogatory, is always to begin with a capatal letter.

Exclamations are sometimes mistaken for interrogations, and *vice versa*; care should, therefore, be taken in examining to which of these two variations the one or the other inclines.

All the points, except the comma and the full stop, have a hair space placed between them and the matter, to distinguish them; the comma and full point not lining with the depth of the face of the letter, do not require any space to bear them off.

The *m* metal-rule, though it cannot be denominated a point, is frequently used in peculiar works; sometimes as a substitute for the comma, at others for the colon; and is found particularly serviceable in rhapsodical writing, where half sentences frequently occur.*

* With respect to punctuation, Smith observes, that "To *perfect oneself, therefore*, in *placing commas right*, *is the ready way* to fair pointing: but to set down rules for arriving to it, would be endeavouring in vain; since practice is the surest guide. Neither is it supposed, that those who initiate themselves *for* the Art, should be so destitute as not to understand pointing, even according to the rules of spelling-books. But to have done with the comma, permit us to conclude with this simile, viz.---'He *that will not say A, will not say* B:" by *which* we should intimate, that he who will not endeavour to place a comma properly, will not know where to put a semicolon, or other point; and therefore ought to *learn* it by dint of a bodkin."

HYPHEN, OR DIVISION.

To divide words or syllables with propriety is an important part of a compositor's business. It will exercise his judgment, and demands particular attention, as authors must leave the use of the hyphen to the discretion of the printer.

The difficulty that formerly existed as to the proper method of dividing syllables, arose from the controversies in which authors were continually engaged on the subject of orthography. Without being able to establish a criterion, each arrogated to himself the *adoption of* his own particular mode, to the subversion of uniformity and propriety.

The Dictionary of Dr. Johnson is now looked up to as the highest authority, and the labour of that great man appears to have been crowned with complete success. It has silenced those pedantic clamours and divided opinions, which distracted the attention of the compositor, and he is now able to solve any difficulty, by a reference to this excellent standard of English orthography. Authors of the present day seldom interfere with what is now deemed the province of the printer: they will generally allow him, from his practice, to be a pretty competent judge of orthography, and therefore not object to his mode of spelling, though it may vary from their own. To the compositor this is an advantage of considerable importance, as it allows him to observe a system in his spelling, and enables him, at the same time, to acquire the proper use of the division, in which he should be careful not to suffer a syllable of a single letter to be put at the end of a line, as *a-bide*, *e-normous*, *o-bedient*, &c. except in marginal notes, which, from their narrow measure, cannot be governed by this rule. The terminating syllable of a word should not be allowed to begin a line, as *ed*, &c. the hyphen

being the thickness of one of the letters, the measure must, therefore, be narrow indeed, or the line very closely spaced, that will not admit the other. A compositor, who studies propriety and neatness in his work, will not suffer an unnecessary division, even in a narrow measure, if he can avoid it by the trouble of over-running two or three lines of his matter.

In large type and narrow measures, the use of the division may admit of an excuse; but, in that case, care should be taken that they do not follow each other. In small type and wide measures, the hyphen may generally be dispensed with, either by driving out or getting in the word, without the least infringement on the regularity of the spacing. The habit once acquired of attending to this essential point, the compositor would find his advantage in the preference given to his work, and the respect attached to his character, from his being considered a competent and careful master of his business. The appearance of many divisions down the side of a page, and irregular spacing, are the two greatest defects in printing.

It is proper, if possible, to keep the derivative, or radical word, entire and undivided; as *occurrence*, *gentle-man*, *respect-ful*, &c.

The hyphen, or division, is likewise used to join two or three words together, which are termed compounds, and consist frequently of two substantives, as *bird-cage*, *love-letter*, &c.; likewise what are termed compound adjectives, as *well-built house*, *handsome-faced child*, &c. But compounds are sometimes made of words that were never intended for such; therefore, to acquire a competent knowledge of them, does not depend upon fancy, but exercises the judgment in discovering the rise and

fall of the tone, which is an adjunct: and whether that and the preceding appellative may not be joined into one word, rather than make a compound of it.

The prepositions *after*, *before*, *over*, &c. are often connected with other words, but do not always make a proper compound; thus, *before-mentioned* is a compound when it precedes a substantive, as, in the *before-mentioned* place; but when it comes after a noun, as in the place *before mentioned*, it should be two distinct words.

Divisions are sometimes used in table-work, indexes, or contents; but, like the full point, they are now generally superseded by dotted rules; for they will not always come off clear, and frequently cut the paper, unless worked with care.

Divisions should not be cast of too thick a body; their principal use is in justifying and correcting, therefore they cannot be too thin to be serviceable; they do not require a very bold stroke, except for spelling-books, for which they are generally cast on purpose.

PARENTHESIS AND CROTCHET.

THE use of the parenthesis is to enclose such words or sentences of a period as make no part of the subject, yet at the same time strengthen the argument; which, however, would read smoothly on were the enclosed matter taken away.

Parentheses are not now so generally used as formerly: authors place their intercalations between commas, which make them equally as intelligible as though they were inclosed between parentheses, and look much neater in print; but where parentheses are used, should a point be requisite to mark the sentence, it is placed after the parenthesis, the intercalation not being reckoned any part of that

sentence; as, for instance, *My Lord (said I), I will tell your Lordship, &c.*

Crotchets are so seldom made use of now, that they require little notice: both parentheses' and crotchets were formerly used to inclose folios, &c.; but the modern method of putting folios in full-faced figures, unattended, leaves the crotchet scarce a duty to perform.

APOSTROPHE.

THE apostrophe is called a sign of abbreviation, its appearance often ejecting some letter or letters from the word to which it is attached, particularly in poetry, where it often contracts two syllables into one, to give a verse its proper measure; to this the vowel *e* yields oftener than any other letter, as *alledg'd, chang'd*, &c. Sometimes it cuts off a vowel at the beginning of words, as *'bate, 'scape, 'squire*, &c.; sometimes a syllable, as *'prentice;* but these, and many other abbreviations, are common only in poetical works, and are under the arbitration of the author, who best knows where such contractions serve his purpose.

The monosyllables *tho'* and *thro'* are sometimes shortened, but without any appearance of propriety to justify the curtailment, as they retain the same sound, and therefore the apostrophe cannot assist the versification.

The genitive case of the singular number is generally known by having *'s* for its termination.

All quotations, which are denoted by beginning with inverted commas, are closed with apostrophes. There is no space required between the apostrophe and the matter.

QUADRATS.

AN m-quadrat is the square of the letter to whatever fount it may belong; an n-quadrat is half that size. In casting of m and n-quadrats, the utmost exactness is necessary; they also require particular care in dressing, as the most trifling variation will instantly be discovered, when ranged in figure-work, for which purpose they are much used; and unless true in their justification, the arrangement is confused to such a degree, that all the pains and ingenuity of a compositor cannot rectify it. The same observation will hold good with respect to figures.

M-quadrats mostly begin paragraphs,* by an indention of the first line; one of them is likewise the proper space after a full-point, when it terminates a sentence in a paragraph.

N-quadrats are generally used after the semicolon, colon, &c. and sometimes after a curved letter; but the use of the n-quadrat in spacing must be guided by circumstances.

Two-m, three-m, and four-m quadrats, are likewise cast for break and white lines, but particularly for poetry, on which account it is essentially necessary that they be cast to the exact depth of the letter, otherwise the matter will stand uneven where a number of them come together.

The inconvenience arising from founts of the same body not agreeing in depth, is great, where the quadrats, through necessity, are sometimes mixed. It is a serious evil, and much to be deplored, that some method cannot be adopted to check it. A particular work will sometimes require

* Formerly paragraphs were always indented with an m quadrat; but of late years some printers prefer using an m and n for narrow measures, and two, three, or even four m's for wide measures, which certainly must be acknowledged to be an improvement, because the space is then sufficient for the reader's eye to notice a paragraph on a single glance.

more quadrats than were originally cast to the letter it is done in—recourse is then had to the founder, though at the time there may be a sufficiency in the house, of the same body, but a different fount, which do not exactly range, and consequently cannot be used. The printer is thus put to unnecessary expense, and, even then, it is a hundred chances to one if they do not get mixed. When they are afterwards used for ranging matter, this defect will occasion much trouble and loss of time. But this is a trifling inconvenience, compared with others, many of which we have before noticed. It is astonishing, that a system so destructive and irregular should have been permitted so long to exist.

Riglets of the same body as the letter of the work, are sometimes used for white lines, instead of quadrats; but, from their being often wetted, they are apt to swell, and of course cannot be depended on; it would be better, therefore, to use space leads, which are cast from 4, 6, and 8, &c. to a Pica, and from 4 m's to any length required.

SPACES.

THE use of spaces is to separate one word from another, so that the reading may appear easy and distinct. To enable the compositor to space even, and to justify with nicety, they are cast to various thicknesses.

Five to an *m*—or five thin spaces; four to an m—or four middle spaces; three to an m—or three thick spaces; and two to an m—or two n-quadrats,

which may with propriety be reckoned among the number of spaces, since they are used in the matter with them. Besides these, there are what are called hair spaces, cast remarkably thin, and found particularly useful in justifying lines and assisting uniformity in spacing.

CHAP. IV.

RULES.

RULES are of three descriptions, viz. brass, metal, or space rules; the former are made by printers' smiths and joiners, and the latter are cast by type-founders.

Brass rules ought to be exactly letter-high: if, therefore, founts differ in height to paper, from the regular standard, those rules, accurately made, are rendered useless; for if they are higher than the letter, they come off black and broad; and, besides hindering the adjoining letters from appearing, they cut both paper and tympan. On the other hand, if they are lower than the letter, they do not appear at all, especially if they are thin, and stand between matter without scaleboard at their sides; which (in particular cases) may be left out in Roman letter; yet in mixt matter, or Italic, a scaleboard at least is required before and after a thin brass rule, to prevent its touching upon *d*, *f*, *l*, at the fore-side, and upon *f*, *g*, *j*, *p*, *s*, *y*, at the hind-side.

Brass rules being commonly cut to the length of sixteen inches, their equality, as to height, from end to end, is not always to be depended on, and therefore should be tried; which is done by holding the foot, and afterwards the face-side of the whole length upon an even imposing stone, and observing whether light can be discovered beyond the rule and the stone, which, if it appears, proves the rule faulty, and shews where it drives out in height, and occasions a hollowness in some other place.

The face of the rules ought also to be attended to, that it may be of an equal bold, or else tender look, according to the size of the letter or figures with which they are used. But a great difference

appears in this particular, when we find it necessary to piece them; a compositor, therefore, when he is driven to this necessity, should endeavour to dress the shorter pieces, in order that they may appear as one length.

The thickness of rules for table-work should be proportionable to their face, without so much shoulder as shall hinder a cross rule from joining a perpendicular line; since it is a maxim, "That rules (in table-work) shall fall upon and touch rules;" which, if followed, has a good effect.

METAL RULES.

METAL RULES, like quadrats, are cast to m's, from the size of one to four, sometimes six m's, and are used in schemes of accounts, to direct and connect each article with its summary contents, where they stand opposite, and distant from each other.

Sometimes metal rules stand for *naughts*, in columns of figures, where the rule should not exceed the extent which figures require. Thus, in a column of four n's, a two-m rule is answerable to them; and where the numeral contents of a column do not amount to above hundreds, a single m rule will answer.

Metal rules made to line and join accurately, are very useful, as they serve not only for rectilinear, but also perpendicular progressions, where no other rules are to touch them. But though they have shouldering sufficient to bear them from the matter, they require, nevertheless, a scaleboard, or, if it will admit, a riglet before and after them, that they may run straight, and meet with nothing that can throw them out of line.

Sometimes a rule stands for a sign of repetition, in catalogues of goods, where it implies *ditto*; and

in catalogues of books, where a rule signifies *ejusdem*, instead of repeating an author's name, with the title of every separate treatise of his writing: but it must be observed, that no sign of repetition, more than *ditto*; *ejusdem*, or *idem*, must be at the top of a page; but that the name of the author, or merchandize, must be set out again at length; and if their series continues, to denote the continuation thereof, at every article, by a rule of three or four m's, so as to range, instead of extending the rule to the different lengths of names.

A metal rule likewise stands for *to*, or *till*; as, chap. xvi. 3—17. that is, from the third to the seventeenth verse. At other times, it serves for an index, to give notice, that what follows it is a corollary of what has preceded; or otherwise matter of import and consequence.

SPACE RULES.

SPACE RULES are not always of the same thickness, though two of them generally answer to the depth of a Pearl body. But this is not of so much moment as their being of a neat look, and made to join well; when this is the case they may be considered valuable sorts. These lines are cast to various widths, from one m to six, to whatever body ordered, and are, in intricate rule work, from their joining more exact, neater than brass rule, less expensive, and more convenient to the compositor.

Particular care should be taken that brass rule be of equal thickness with the space rule, otherwise they will not range in line.

BRACES.

BRACES are chiefly used in tables of accounts, and similar matter, that consists of a variety of articles,

which would require much circumlocution, were it not for the method of tabular writing, which is practised in England to much greater perfection than in any other nation.

Braces stand *before*, and keep together, such articles as are of the same import, and are the subdivisions of the preceding articles. They sometimes stand *after*, and keep together, such articles as make above one line, and have either pecuniary, mercantile, or other posts after them, which are justified to answer to the middle of the brace.

The bracing side of a brace is always turned to that part of an article which makes the most lines.

Braces are sometimes used in the margin to cut off a chronological series from the proper notes of the work. They are generally cast to two, three, and four m's, but can be made larger if ordered. When there is occasion for them larger, middles and corners are used with metal rules, so that the brace may include any space.

Middles and corners, as well as metal rules, require to be cast with great exactness, that when joined they may appear as one piece; their shoulders, in dressing, should be planed away, so that the beard may not prevent the face from meeting.

Middles and corners are convenient in genealogical works, where they are used the flat way; and where the directing point is not always in the middle, but has its place under the name of the parent, whose offspring stands between corner and corner of the brace inside, in order of primogeniture.

SUPERIORS.

As we have already treated of superior letters and figures under the head of references, it will not be necessary to take further notice of them here, than

to observe, that they should contain no more than the bare alphabet, without any double letters. Neither ought the j to be used as a reference, on account of its being a descending letter. A larger number should be cast of the first eight sorts; a less of the second, and a still less quantity of the third eight sorts; because it often happens that references begin with [a] in every page; though sometimes they are continued to the end of a chapter, or other division of a work; in which case they may run the length of the alphabet.

The same rule may be observed in respect to superior figures, more of the first five being used than of the others, except the nullo, which may be used as a degree in geometrical works.

FRACTIONS.

FRACTIONS, or broken numbers in arithmetic, are seldom cast to any other bodies than those of Pica, Small Pica, Long Primer, Burgeois, and Brevier. The Pica is equal to two Nonpareil bodies, and the Long Primer to two Pearl.

The separatrix, or rule between the numerator and denominator, was formerly joined to the foot of the first: but it is considered that the figures of 3, 4, 5, 7, 9, are thereby cramped, and for that reason it is now cut to run in the top line of the denominating figure, which is a considerable improvement.

The goodness of fractions does not consist in their having a small and fine face, but rather in shewing themselves full and clear. The improvement which has taken place in the appearance of our modern figures, ought to be followed in the casting of fractions:—In works where they are used, they should appear clear and conspicuous, independent of the propriety of preserving their proportion.

Where a fraction happens with large-bodied figures, such as Great Primer, and upwards, it is usually set out at length, unless Nonpareil figures can be conveniently had, which may be justified with the same neatness as fractions cast to the body.

QUOTATIONS.

QUOTATIONS are cast to two sizes, and are called broad and narrow. They require to be dressed and finished with as much care as any other sort, that they may stand true upon all occasions. They vary in size according to the standard of the foundery where they are cast, which is highly improper; as they should be governed by a regular standard as well as every other sort, and to that standard press-joiners ought to cut their furniture; but we are sorry to observe so little attention paid to this important part of the joiners' business, who follow too much in the steps of the letter-founder, and cannot decide on, and adhere to, a standard gauge for their furniture. This want of uniformity gives the compositor much trouble in making margin, and, with all his care, a form will sometimes go to press imperfect in this respect, which is immediately discovered on laying on the reiteration. The pressman has then to unlock the form in order to make register; from this, a dispute will too frequently arise between him and the compositor; and, what is still worse, from frequent unlocking on the press, the pages will suffer some derangement, so that the most skilful corrector's endeavours to send a work perfect to press, will thereby be frustrated.

Quotations should not be cast so high as they sometimes are, for no other purpose than to encrease their weight; if they are above the height of a quadrat, they will black the paper; and the pressmen,

who are generally not very patient in remedying what may obstruct the progress of their work, generally apply to the sheep's-foot, by which means they are rendered useless.

Justifiers are cast for broad and narrow quotations, to all sizes, from Double Pica to Pearl inclusive, for the purpose of ranging the side note with its proper text; in doing which, great care is requisite, especially where there are many in a page.

TWO-LINE LETTERS.

THEY are now cut to the following bodies, Pearl, Nonpareil, Minion, Brevier, Burgeois, Long Primer, Small Pica, Pica, English, &c. and are found extremely useful in titles, the beginning of chapters, &c. A specimen of the different sizes will be given in its proper place.

FLOWERS.

AT one period flowers were held in the greatest estimation, and the skill and ingenuity of the compositor was often put to the test in forming facs and devices to grace the head pages of his work; their disuse, of late years, may be attributed to either of the following causes: first, the heavy expense incurred in the purchase of them;* secondly, the want of taste evinced by the founders in the selection of their patterns,† which, certainly, are little cal-

* We never could reconcile to our minds why the founders should charge flowers double the price of type; there certainly can be no reasonable ground for this: they urge, in justification of it, the small quantity sold, and the number cut which never pay the expense; admitting this, what is the cutting of two punches, in comparison with that of a complete fount of letter! which is certainly liable to the same chances of sale.

† We feel fully persuaded, that were we to submit the whole of the type-founders' specimens of flowers to the judgment of artists for their selection, that they would reject more than nine-tenth's of them as unsuitable to the taste of a British public; again, we con-

culated to suit the general taste of a refined public, who are in the daily habit of beholding some of the most beautiful productions of the Fine Arts.

It has been observed, that

"Master printers have now reason to rejoice, that the present improved mode of printing has eased them of the burden of expensive founts of flowers and cases."

A few years since, so great was the rage for novelty and alteration, that some printers were not content with merely the exclusion of flowers, but they stript their works of every article which had the least appearance of ornament; even rules of every description were banished from their proper stations in title-pages, heads, &c. To make up for the rules, which were necessary to mark the separations, they were compelled to throw in additional spaces, which white paper had certainly a very unsightly appearance; but this new-fangled rage did not long continue, and it was with some reluctance that they would consent to the re-introduction of them in certain cases, and thus, by degrees, rules have again resumed their necessary functions.

The founders have nearly taken the whole range of fancy in the cutting of different types; but they have not kept equal pace in the improvement of flowers, which, with all their defects, are now held in great estimation, and we are convinced that they would again come into pretty general use, were the founders to improve by the hints which we have here presumed to suggest.

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sider that they act improperly in not casting every flower to the full depth of the body, because the printer would then have a much greater scope for his fancy; he could either have his lines close, or spaced, according to circumstances; whereas, upon the present system, he is prevented from using flowers which might form an excellent border, were it not for the great separation occasioned by each flower having a large beard.

CHAP. V.

NAMES OF LETTER, AND THEIR BEARINGS TO EACH OTHER.

HAVING already treated upon the properties and shapes of types, and of all the sorts contained in a complete fount of letter, with some observations on the use and proper application of them; together with the inconveniences to which both the type-founders and printers are daily exposed (particularly the latter) from the present, and now vastly encreasing, irregular practise of casting type, we are fully persuaded, that this growing evil cannot be too strongly reprobated by every lover of the art, whose chaste eye is perpetually offended, when glancing on a page, by some glaring defect or other; particularly in the mixture of type, which, though of the same body, is widely different in the face, as well as being sometimes too high to paper, and at other times too low; either of which defects are equally bad. For these improprieties, from which we firmly believe that scarce any work is exempt, both parties are highly culpable; and we sincerely wish, for our own sakes as well as that of our patrons and admirers, that this pernicious system was entirely abolished. Had the founders any just reason for deviating from the standard of the Dutch, which had been first proved and established by the [Germans] inventors? The alterations, from whatever motives they were made, certainly redound not to the credit of either the adopters or the first promoters. We shall now leave the founders and printers to reflect upon what we have advanced, and pursue our course, by endeavouring to explain the origin of the names of the various sized letters.

Names of the various Sizes of Letter, in England, France, Germany and Holland.

ENGLISH.	FRENCH.	GERMAN.	DUTCH.
	Le gros Double Canon	Imperial	
	Le Double Canon	Real	
1. French Canon	Le gros Canon	Missal	Parys Romeyn
2. Two lines Double Pica	Le Trismegiste	Sabon	Grooto Kanon
3. Two lines Great Primer	Les deux Points de gros Romain	Canon	Kanon
4. Two lines English	Le Petit Canon	Roman	Dubbelde Augustyn
5. Two lines Pica	Les deux Points de Cicero, ou la Palestine		Dubbelde Mediaan
6. Double Pica	Le gros Paragon	Text, or Secunda	Dubbelde Dessendlaan
7. Paragon	Le petit Paragon	Paragon	Paragon
8. Great Primer	Le gros Romain	Tertia	Text
9. English	Le Saint Augustin	Mittel	Augustyn
10. Pica	Le Cicero	Cicero	Mediaan
11. Small Pica	La Philosophie	Brevier, or Rheinlaender	Dessendlaan
12. Long Primer	Le petit Romain	Corpus, or Garmond	Garmond
13. Burgeois	La Gaillarde		Burgeois
14. Brevier	Le petit Texte	Petit, or Jungfer	Brevier
15. Minion	La Mignione	Colonel	
16. Nonpareil	La Nonpareille	Nonpareille	Nonpareil
17. Pearl	La Parisienne, ou Sedanoise	Perl	
18. Diamond			

* Independent of the above sizes, we have just been informed, that Mr. Miller, of Edinburgh, has introduced another, which he designates by the name of *Ruby*; it is a size between *Pearl* and *Diamond*. Now, let us ask the experienced printer, what is the difference between a small-faced *Pearl*, when cast upon a full-charged *Diamond* body, (which has frequently been the case in London) and this boasted *Ruby*: it is true, the face may differ, and probably it may be acknowledged far superior, in point of symmetry and true shape, to all its neighbours; still its beauty will not counterbalance the evil likely to result to the printer from the liability of its being mixed with either or both of the other bodies to which it is so nearly allied.

French Canon is confessed to have been first produced by some artizan of that nation, and employed in some work relating to the canons of the church; to which the German title, Missal, likewise alludes.

The sizes marked 2, 3, 4, 5, 6, have their names from the respective bodies, of which the depth of two m-quadrats answers to one of the double sizes. But we must here take notice, that our Double Pica falls in with what the Germans call Secunda, from which it follows, that there should be a Prima; but because we have met with no letter of that name, we conclude that Prima, being a size larger than Secunda, and happening to answer afterwards to two lines of English, Prima lost its first name, and was turned into that of Roman. Besides, that Double Pica goes in Germany by the name of Secunda, that letter is also called Text; as we cannot assign the reason for it, we shall leave it to connoisseurs to observe which of the primitive books has its text printed in that character.

Paragon is the only letter that has preserved its name, being called so by all the printing nations. Its appellation shews, that it was first cut in France; and at the same time gives us room to suppose, that the state of well-shaped letter there was at that time but indifferent; because, when Paragon happened to turn out a letter of better shape than the rest, it received the name of *perfect pattern*, which the word Paragon implies.*

* It will probably be asked, why should we commence with Great Primer (in its own type) without giving the higher sizes? to which we shall answer, it rarely occurs that works are printed in larger type than the above body; and the width of our page being so small, would not admit of our introducing type of a larger size, without a glaring infringement upon typographical order. Yet, we must acknowledge that we consider it necessary to present our readers with a view of the regular gradations of types, which will more properly appear in our specimen.

Great Primer, in Germany, is called *Tertia*, and is therefore one of the major sizes of letter which, in the infancy of the Art, served for printing several works of consideration, and particularly the Bible; on which account it is by some called *Bible Text*.

English is called *Mittel* by the Germans, and *St. Augustin* by the French and Dutch; both which names might be productive of considerable argument; the word *Mittel* bear-

ing the same meaning with Middle, intimates, that the former sizes of letter were seven in number, the centre of which being English, with *Prima*, *Secunda*, and *Tertia*, ranging on one side, and Pica, Long Primer, and Brevier, occupying the other. As to the name of *St. Augustin*, as it is designated by the French and Dutch, we understand that the writings of that Father were the first works done in that size letter; but whether the first or the last have a right to claim the honour of the performance, we shall leave to the decision of others.

Pica is another letter that admits of having particular notice

taken of it, on account of its being called Cicero by the French and Germans; for as the preceding size was distinguished by the name of St. Augustin, so has this been honoured with that of Cicero, on account of the Epistles of that writer having been first done in letter of this size, in which we are not left to mere conjecture, but have tradition on our side; for, in the year 1704, it was asserted by a compositor, then upwards of seventy years of age, whose authority, though allowed to rest on hearsay evidence, deserves notice, when we consider the early period the assertion was made, and that no contradiction has prevented its belief, as well as the probable reason why founts should be named after the works for which they were first used; therefore we have only to trace

this relation two or three lives back, and we shall be brought to the time when it was considered an undoubted fact. This point ascertained, why the Pica body acquired the name of Cicero, it may open a fair field for conjecture on most of the other disputed bodies, and may enable those who feel interested in the controversy to decide whether the Germans or the French were the first who dedicated the letter of this body to the name of Cicero on the before-mentioned account.

Small Pica, being of an irregular body, takes its name here from its inferiority to Pica. But in France they assign the invention of this body of letter to Philosophie; for which, indeed, they may have their reason, considering that their Cicero and Philosophie are of one and the same face; from which we conclude, that they did not consider Small Pica

worth cutting with a face proportionable to its body; and that the cramping of Cicero to Philosophie, was done with no other view than to get in upon the former. This we venture to suggest, though we can form no idea why the Germans give this letter the name of Brevier.

Long Primer. Upon the same supposition, that some bodies of letter took their names from works in which they were first employed, we are induced to believe that the Germans gave the name of Corpus to this character, on account of their Corpus Juris being first done in this size, as it is still continued in that letter; but whether Garmond is the name of the author, or what signification else it bears, we have no items of. In contradistinction of the French Gros Romain, they call this size letter Petit Romain, conformable to the distinction that is made between Great Primer and Long Primer in England.

Burgeois is a letter of an irregular body, and has hitherto been received accordingly. By its name it seems to have first come from France, having been dedicated to the master printers there. Gaillarde is a letter of the same body, but has the face of Petit Romain.

Brevier takes its name from being first used for the Breviary, a Roman Catholic Church-book, which is commonly printed in this character. It is also called Petit; and Jungfer, or Maiden Letter, by the Germans, on account of its comeliness.

Why this letter was denominated Minion, we have not yet been informed; probably it was held in great estimation on its first introduction, and consequently received the title of [Darling] Minion.

Little can be observed with respect to this character: why it received the name of Nonpareil no one has yet ventured to investigate, it is therefore most probable that the appellation was given on account of its extraordinary smallness in proportion to those letters at that time in general use.

With respect to this size we are left in the same situation as the last-mentioned, consequently we shall again venture at a suggestion for the name which it has received: it is probable that the success of the foregoing induced the founders to attempt cutting another letter upon a smaller body; and as this was, undoubtedly, a greater advance to perfection, it, of course, was designated Pearl.

Even the minuteness of the type just mentioned, did not deter the founders from attempting one upon a still smaller scale, in which they have succeeded even beyond the most sanguine expectation, for which they are justly entitled to great credit; thus, having gained the summit of perfection, they bestowed upon it the name of Diamond, as most suitable to its extraordinary neatness and consequent value. We are of opinion that their efforts at farther minutiæ must now cease, unless they will undertake to furnish mankind with eyes possessing all the qualities of a magnifying glass.

It is necessary to observe, that the foregoing gradation of types, from Great Primer to Diamond inclusive, were not cast by one and the same founder; still this is not of the least consequence, when it is considered that the founders have various faces to the type of each body, consequently it would have not only been improper to have made a selection of those which might agree as to the regular gradation, but it would also have been attended with a waste of time, and an unnecessary expense; therefore we thought proper to take those which were immediately at our command.

THE PROPORTION WHICH ONE BODY OF LETTER BEARS TO ANOTHER, AS TO DEPTH AND WIDTH.

It is a point of the ut-

most importance that a printer should be well acquainted with the exact proportion which one body of letter bears to another; without a possession of this knowledge, he is unable to form an accurate judgment as to the size of the type most suitable for a work that is intended to be confined within a given number of sheets; neither can he form a correct opinion as to the extent of a work, unless he possess a rule whereby to guide his calculation as to the quantity of copy which the proposed type may either take in, or otherwise drive out.

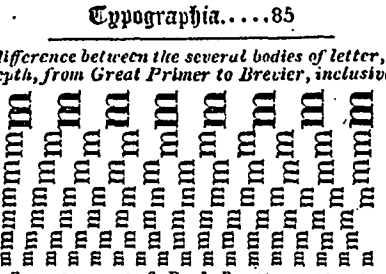
Independently of the letters which are cast upon these bodies, the founders, in order to accommodate the whims and fancies of the printers, cast one sized type upon another body: *viz.* a Nonpareil face on a Minion body, and a Minion on a Nonpareil: a

Small Pica on a Pica,

and vice versa; as well as all the other sizes, either in ascending or descending order: when a large face is cast upon a small body, the intention is not only to take in, but at the same time to give the type a bold look; when a smaller upon a larger body, the object is not only to gain in width, but also to give the page a light airy appearance.

We trust that the above contrast will furnish the reader with a pretty clear idea as to the proportion which one type bears to another, but he must keep in mind that they were not selected as being in regular gradation, but taken indiscriminately.

*The difference between the several bodies of letter, as to depth, from Great Primer to Brevier, inclusive.**

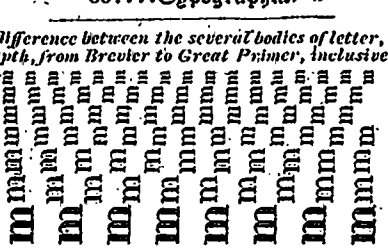


Gr. Pr. Eng.			54 — 60	S. P.	L. P.		63 — 72		60 — 75
4 —	5		63 — 70	14 —	15		70 — 80		64 — 80
8 —	10		72 — 80	28 —	30		77 — 88		68 — 85
12 —	15		81 — 90	42 —	45		84 — 96		72 — 90
16 —	20		90 — 100	56 —	60		91 — 104		76 — 95
20 —	25		99 — 110	70 —	75		98 — 112		80 — 100
24 —	30			84 —	90				
28 —	35		Pica S. P.	98 —	105		L. P.	Bre.	Bre. Bur.
32 —	40		7 — 8	112 —	120		4 —	5	9 — 8
36 —	45		14 — 16	126 —	135		8 —	10	18 — 16
40 —	50		21 — 24	140 —	150		12 —	15	27 — 24
44 —	55		28 — 32	154 —	165		16 —	20	36 — 32
48 —	60		35 — 40	168 —	180		20 —	25	45 — 40
52 —	65		42 — 48	L. P.	Bur.		24 —	30	54 — 48
56 —	70		49 — 56	7 —	8		28 —	35	63 — 56
			56 — 64	14 —	16		32 —	40	72 — 64
Eng.	Pica		63 — 72	21 —	24		36 —	45	81 — 72
9 —	10		70 — 80	28 —	32		40 —	50	90 — 80
18 —	20		77 — 88	35 —	40		44 —	55	99 — 88
27 —	30		84 — 96	42 —	48		48 —	60	108 — 96
36 —	40		91 — 104	49 —	56		52 —	65	117 — 104
45 —	50		98 — 112	56 —	64		56 —	70	126 — 112

* We insert the above and the following proportions, which one letter bears to another, as they stood in Smith's time; which may, in fact, be considered as something like a standard: they remained nearly in that state, with little variation, till 1800, when the double letters were generally abolished, † from which period nothing but confusion ensued; because the founders, when they commenced cutting new founts with the round s, in order to secure the printers who purchased type from them, varied the letter both in height and depth; therefore, endless would be the task, were we to attempt to give the bearings of the types at present in use, because, as we have before observed, not only do respective founders vary, but as great a difference exists in each individual foundry.

† Mr. John Bell first made this improvement, about 1795-6.

*The difference between the several bodies of letter, as to depth, from Brevier to Great Primer, inclusive.**



Bur.	Bre.
112	126
104	117
96	108
88	99
80	90
72	81
64	72
56	63
48	54
40	45
32	36
24	27
16	18
8	9

Bre.	L. P.
100	80
95	76
90	72
85	68
80	64

75	60
70	56
65	52
60	48
55	44
50	40
45	36
40	32
35	28
30	24
25	20
20	16
15	12
10	8
5	4

Bur.	L. P.
112	98
104	91
96	84
88	77
80	70
72	63
64	56
56	49
48	42
40	35
32	28
24	21
16	14
8	7

72	68
64	56
56	49
48	42
40	35
32	28
24	21
16	14
8	7

L. P.	S. P.
180	108
165	154
150	140
135	126
120	112
105	98
90	84
75	70
60	56
45	42
30	28

15	14

S. P.	Pica
112	98
104	91
96	84
88	77
80	70
72	63
64	56
56	49
48	42
40	35
32	28
24	21
16	14
8	7

Pica	Eng.
100	90
90	81
80	72
70	63

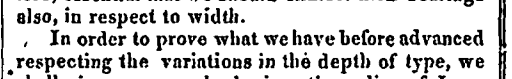
60	54
50	45
40	36
30	27
20	18
10	9

Eng.	Gr. Pr.
70	56
65	52
60	48
55	44
50	40
45	36
40	32
35	28
30	24
25	20
20	16
15	12
10	8
5	4

* In the last work upon this subject, a scale was introduced for measuring the depth of letter from Great Primer to Nonpareil; this was the invention of Mr. H. Bryer, and rules for this purpose were made by Mr. Bleuler: we should have inserted a similar scale, had we not been convinced of its inutility. If letter were cast, as it ought to be, to a mathematical standard, such a scale would be of the greatest consequence: a certain number of m's, unquestionably, should be allowed to a foot, as three barley corns to an inch: viz. Pica 72 m's, and all others in the same proportion; whereas, we now have halfs and quarters included: from such a system, what can we expect but confusion! They may vary the face of the letter as they please; but, as to height to paper and depth of body, the printers should insist upon their keeping to a true mathematical standard.

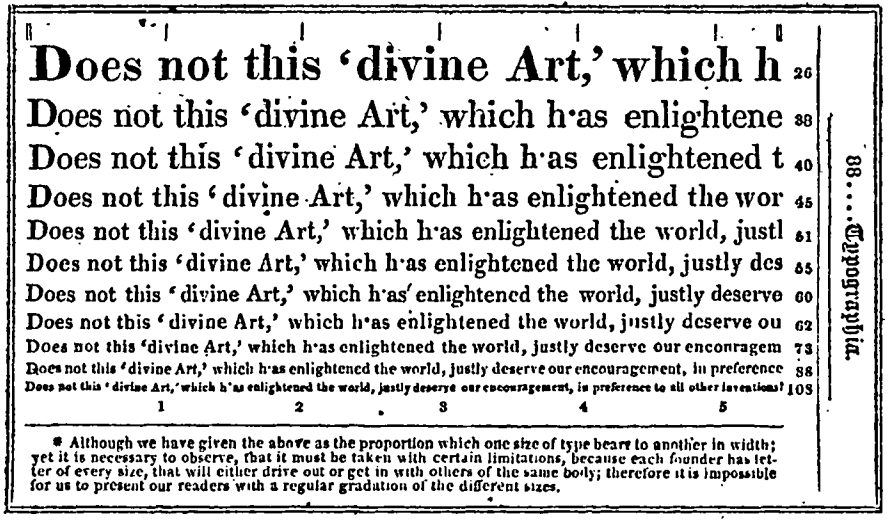
The two preceding schemes are given to point where one size of letter falls even with another, either in ascending or descending order; thus, every ninth line of English agrees with every tenth line of Pica, and so on, in the ascending order; and by reversing the scale, every ten lines of Pica occupy the same place with nine lines of English in the descending order, according to the second scheme. But because casting off copy requires more than to know how much one letter either drives out, or gets in, upon another in depth; it is, therefore, essential that we should exhibit their bearings also, in respect to width.

In order to prove what we have before advanced respecting the variations in the depth of type, we shall give an example, by inserting a line of Long Primer m's from three of the greatest founders:—



The great difference in body here exhibited, not only applies to Long Primer, but also to every other size; how liable then is the founder to take a wrong mould, when casting either additions or imperfections to a fount: surely a system fraught with such destruction ought to be discouraged by the whole body of printers, as detrimental to their interests.

The following scheme exhibits the proportion which one size of type bears to another in width, from Great Primer to Diamond inclusive: the limitation of each line is marked by an inverted full-point, and the number of letters contained in each is given at the end. The length of the line is divided into six parts, five four m's, and one of two m Pica.


Does not this 'divine Art,' which h 26
Does not this 'divine Art,' which has enlightene 38
Does not this 'divine Art,' which has enlightened t 40
Does not this 'divine Art,' which has enlightened the wor 45
Does not this 'divine Art,' which has enlightened the world, justl 61
Does not this 'divine Art,' which has enlightened the world, justly des 65
Does not this 'divine Art,' which has enlightened the world, justly deserve 60
Does not this 'divine Art,' which has enlightened the world, justly deserve ou 62
Does not this 'divine Art,' which has enlightened the world, justly deserve our encouragem 73
Does not this 'divine Art,' which has enlightened the world, justly deserve our encouragement, in preference 88
Does not this 'divine Art,' which has enlightened the world, justly deserve our encouragement, in preference to all other inventions? 103
1 2 3 4 5
88.....Typographia

* Although we have given the above as the proportion which one size of type bears to another in width; yet it is necessary to observe, that it must be taken with certain limitations, because each founder has letter of every size, that will either drive out or get in with others of the same body; therefore it is impossible for us to present our readers with a regular gradation of the different sizes.

This scheme is also of use in casting off copy; for if we divide the width of a manuscript into equal parts, we can more readily compute our copy, by observing how many parts are required to a line in print. The parts thereof into which we divide our copy for mensuration, ought to be suitable to the size of it; viz. wider for what is written in folio, and closer for that which is written in quarto, or in octavo. These equal parts are drawn out upon a piece of paper answering to the length of a *line* of writing; and having first tried how many parts of manuscript go to a line in print, we may find how many lines of writing will make even lines in print; which, when found, will make it easy to cast off for pages, forms, or sheets. And, to mention another convenience there is in dividing the lines of copy into equal parts, it will assist us in writing that varies; in which case we may allow as many parts to a line in print as we think proper. But because we do not expect that our scheme will meet with a general reception, we shall leave every one to his choice, and present another mode which is now usually adopted for casting off copy.

As this article bears so close an affinity to the casting off copy, it will not be improper to introduce it in the present chapter.

CASTING OFF COPY.

To cast off manuscript with accuracy and precision, is a task of a disagreeable nature, which requires great attention and mature deliberation. The trouble and difficulty is much encreased, when the copy is not only irregularly written (which is too frequently the case), but also abounds with interlineations, erasures, and variations in the sizes of paper. To surmount these defects the closest application and

attention is required; yet, at times, so numerous are the alterations and additions, that they not unfrequently baffle the skill and judgment of the most experienced calculators of copy. Such an imperfect and slovenly mode of sending works to the press (which is generally attended with unpleasant consequences to all parties) cannot be too strongly deprecated by all admirers of the art.

The first thing necessary is to take a comprehensive view of the copy, and to notice whether it is written even, if it has many interlineations, &c. also the number of break lines, and whether divided into chapters and sub-heads, in order that allowance may be made for them in the calculation, so that the plan of the work may not afterwards be infringed on. These observations should be entered as a memorandum, on a separate piece of paper, to assist the memory, and save the trouble of re-examining the manuscript.

This preparation being made, we then take that part of the copy for our calculation which comes nearest to the general tendency of the writing, and reckon the number of words contained in one line, previously counting a number of separate lines, so that the one we adopt may be a fair average; we then take the number of lines in a page, and multiply the one by the other, which we again multiply by the quantity of folios the manuscript copy may contain, and thus we are put in possession of the amount of the words contained in the work, with as little loss of time, and as much accuracy as circumstances will admit; the necessary allowances should then be made for break lines, chapters, insertions, &c. according to the observations previously made on the memorandum.

If the information has been furnished, what size

letter the work is to be done in, and what the width of the page, we make our measure accordingly, and after composing a few lines of the manuscript copy, are enabled to form an opinion what number of words come into each printed line; we then take the length of our page, generally to double the number of m's contained in a single line, and multiply the one by the other, which produces the information we had previously gained from the adoption of the same mode on the manuscript page; we compare their results, and if the manuscript drives out, we multiply the print by a larger number than the last folio of the writing, and so *vice versâ;* if the print drives out, we multiply it by a less, until we bring the number of words to agree; the multiplier on the printed calculation will shew what will be the last folio of the printed volume, which we divide into sheets according to the given size of the work, and we are then in full possession, whether it will bear to be leaded, or the chapters begin pages, &c. or whether it must be made up close, the measure widened, the page lengthened, or the size of the letter reduced.

Should the size of the page and letter be left to the opinion of the printer, with no other order than the number of sheets the work is intended to make, from following the above mode he will be enabled pretty accurately to give his directions;—but as it is necessary, on a subject like the present, to be as clear in our observations as possible, we will exemplify what has been laid down. We are supposed to have made our remarks upon the manner of the writing as directed, and we take the number of words in a line of manuscript at 20, the lines in a page at 50; we multiply 50 by 20, which will produce 1000 words in a page; we then multiply 1000

by 422, which are supposed to be the number of folios in the manuscript, and we shall find it contain 422,000 words.—The work being printed in Pica 8vo. 20 m's measure, and each line containing 10 words, each page 40 lines—the case will stand thus:—

MANUSCRIPT.		PRINTED.
50		40
20		10
1000		400 { 1055 / 400
422		
2000		422000 words
2000		
4000		Divide
422000 words in MS.		16 | 1055 | 65 sheets, 15 pages.

Having ascertained the number of sheets the work will make, and that number being sufficient for two volumes, they are divided accordingly. But should the author wish to have his work comprised in one volume, it is requisite to be prepared with the sized type and measure which may accord with his inclination. By referring to the preceding scale of proportions, and placing the Brevier by the side of the Pica body, we find that a page will contain sixty-two lines instead of forty, and the same difference in the width, which will be one half more than the former calculation. We therefore multiply 62 by 15 words in a line, one half added to the 10 in Pica, which will give 930 words in a page; multiply that by 454, it will produce 422,220 words; 454 will therefore be the last folio, should the volume be printed in Brevier, which will be 28 sheets and six pages. In works that are to be leaded, the calculation must be made according to the thickness of the leads in the house in which the

work is to be printed, as they are apt to vary; suppose we take leads three to a Brevier; consequently, in a work similar to the foregoing, we should add one-third for leads, which will drive it out to 604 pages, or 37 sheets, 12 pages, this being more than a volume generally contains; if it should be thought so, the measure may be widened and the page lengthened.

As there are two methods of casting off copy, we shall conclude this article with the one laid down in former grammars:—

"After having made the measure for the work, we set a line of the letter that is designed for it, and take notice how much copy will come into the line in the stick, whether less or more than a line of manuscript. And as it is seldom that neither one nor the other happens, we make a mark in the copy where the line in the stick ends, and number the words that it contains. But as this is not the safest way for casting off close, we count not only the syllables but even the letters that are in a line in the stick, of which we make a memorandum, and proceed to set off a second, third, or fourth line, till a line of copy falls even with a line in the stick. And as we did to the first line in the stick, so we do to the other, marking on the manuscript the end of each line in the stick, and telling the letters in each, to see how they balance against each other. This being carefully done, we begin counting off, each time, as many lines of copy as we know will make even lines in the stick: For example, if 2 lines of copy make 3 lines in print, then 4 make 6, 6 make 9, 8 make 12, and so on, calling every two lines of copy three lines in print.

"In like manner we say, if 4 lines make 5, then 8 make 10, and so on, comparing every four lines of copy to five lines in print.

"And in this manner we carry our calculation on as far as we have occasion, either for pages, forms, or sheets.

"The foregoing calculations are intented to serve where a line of print takes in less than a line of copy, and therefore where a line of print takes in more than a line of copy, the problem is reversed, and instead of saying, if 2 lines make 3, we say in this case, if 3 lines of copy

make 2 lines in print, then 6 lines make 4, 9 make 6, 12 make 8, and so on, counting three lines of copy to make two lines in print. In this manner we may carry our calculation to what number of pages, forms, or sheets, we will, remembering always to count off as many lines of copy at once, as we have found they will make even lines in the stick. Thus, for example, if 5 lines make 7, the progression of 6 is 10, 15, 20, &c. and the progression of 7 will be 14, 21, 28, &c.

"In counting off copy after this manner, we take notice of the breaks; and where we judge that one will drive out, we intimate it by a mark of this ∠ or this [shape; and again, where we find that a break will get in, we invert the mark thus ⅄ or thus]. And to render these marks conspicuous to the compositor, we write them in the margin, that he may take timely notice of, and keep his matter accordingly.

"We also take care to make proper allowance for heads to chapters, sections, paragraphs, &c. and mention in the margin what depth of lines is left for each, in case their matter varies in quantity.

"In examining the state of the copy, we must observe whether it has abbreviations, that we may guard against them in casting off, and allow for them according to the extent of the respective words, when written out at length."

We trust that the foregoing observations upon this subject, will convey a sufficient idea as to the best mode of casting off copy; still these remarks more properly apply to regular written, as well as thoroughly revised copy. Upon this point, Smith justly observes—

"But how often one or more of these requisites are wanting, compositors can best tell; though very few will imagine, that among men of learning there should be some, who write after such a manner, that even those who live by transcribing, rather shun than crave to be employed by them: no wonder, therefore, if compositors express not the best wishes to such promoters of printing. But it is not always the capacious genius that ought to be excused for writing in too great a hurry; for sometimes those of no exuberant brains affect uncouth writing, on purpose to strengthen the common notion, that the more learned the man, the worse is his

[*hand*] writing; *which shews, that writing* well, or bad, *is but a habit with those that* can *write.*"

He then observes, that copy which is written without order or method, is of equal injury to the author as the compositor; especially if there are more than one kind of notes, in which case it frequently happens, that the text, notes, and additions, are so jumbled together, that it is with great difficulty one can be distinguished from the other: the casting off such copy is next to an impossibility. To remedy these evils, he suggests the following:—

1. They choose black ink, and white paper, to write their copy on; and consider, that it contributes much to make a manuscript look fair, though it should not prove so in all other respects.

2. They fix upon the size in which they propose to write their copy, either in folio, or in quarto; because an octavo is too soon filled.

3. If the matter has marginal notes, they leave margin for them accordingly, to mark them in their proper places.

4. They do not over-charge the paper, by writing to the very edges and ragged extremities of it, but leave room at least to mark memorandums.

5. They write the mean matter of the work on one side, viz. the right-hand side of the paper: and leave the left-hand side for bottom-notes, additions, and other incidental emendations. But some who are still better methodists in writing for the press, divide each side of the paper into two columns, filling one with text matter, and leaving the other column for insertions, alterations, notes, &c.

6. They take care to put proper references to such places of the text as are illustrated by notes; and another of the same shape before the note that illustrates a passage.

7. They choose such marks and symbols for references as present themselves readily to the eye; such as letters and figures between parentheses, or crotchets; astronomical signs, and other the like characters.

8. They use no abbreviations or contractions; and if they have accustomed themselves to any, they draw them out, and, together with their explanation, send them with the copy, to serve the compositor in setting such abbreviated words at length.

CHAP. VI.

OBSERVATIONS ON COMPOSING.

BEING now arrived at that portion of our work which more immediately concerns the young practitioner, we deem it highly requisite to offer a few remarks on the attitude or position which it is necessary that he should acquire upon his first introduction to the department of composing.

Although this essential point has been passed over with little notice by most writers upon this subject, still (so great are the evils resulting from ill-contracted habits, which naturally keep pace with our growth), we cannot avoid pointing out a few instances of the sure consequences attendant on them. There are many persons now employed in the art, who frequently, with great justice, inveigh in strong terms against the conduct of those unto whose care they were first entrusted, for suffering them to contract those ill-becoming postures which are productive of knock knees, round shoulders, and other deformities. It is deeply to be regretted, that those who undertake so important a charge, are not better qualified to fulfil that duty: instead of suffering the tender shoot to grow wild and uncultivated, when the pruning-knife, in a gentle hand, with a *little* admonition, would have checked its improper growth, and trained it in a right course.

What to a learner may appear fatiguing, time and habit will render easy and familiar; and though to work with his cases on a level with his breast, may at first tire his arms, yet use will so inure him to it, that it will become afterwards equally unpleasant to work at a low frame. His perseverance in this mode must be strengthened by the reflection, that it will most effectually prevent his becoming round

shouldered, a distinguishing mark by which compositors are in general known, especially if they are above the common stature. This method will likewise keep the body in an erect position, and prevent those effects which result from pressure on the stomach.

The standing position should be easy, with the feet not too much apart; neither should the idle habit of resting one foot on the bed of the frame be encouraged, or standing with one foot bent inwards, the certain forerunner of deformity. The head and body must be kept perfectly steady, the arms alone performing the operations of distributing and composing.

The question still remains undecided with many masters, as to the most proper part of the business that should first engage the attention of the learner without confusing his ideas; various methods are adopted, each following the mode he thinks best. Sorting pie is generally the first employment, and afterwards to set it up, which unquestionably gives the youth a strong insight into the nature of the business, makes him acquainted with the different sizes of type and the method of composing, and prepares his understanding for the comprehension of whatever direction may be given him when he is put to the case. We shall, however, follow the method generally adopted, which is that of first teaching him the nature of the cases, a knowledge easily acquired by attention.

Since the general adoption of round, in the room of long s's, many cases have been made upon a plan different from the original ones. We shall first give the old cases, then those in general use; afterwards, the late Lord Stanhope's plan; and, lastly, those which we have adopted.

UPPER CASE.—*(Upon the Old Plan.)*

A	B	C	D	E	F	G	A	B	C	D	E	F	G
H	I	K	L	M	N	O	H	I	K	L	M	N	O
P	Q	R	S	T	V	W	P	Q	R	S	T	V	W
X	Y	Z	Æ	Œ	U	J	X	Y	Z	Æ	Œ	U	J
1	2	3	4	5	6	7	å	ê	ì	ô	ù	ſ	‡
8	9	0	ç	hair spaces	ſt	ſk	á	é	í	ó	ú	‖	†
ä	ë	ï	ö	ü	ft	k	à	è	ì	ò	ù	¶	•

Lower Case.—(*Upon the Old Plan.*)

ct	[	æ	œ	'	j	e	s	(	?	!	;	ſl	ſl
& / ſſi	b	c		d			i	f	f	g	ſh	ſſ / ſi	ſſ / ſi
ſſi / ſſl	l	m		n		h	o	y	p	,	w	n quadrats	m quadrats
z / x	v	u		t		spaces	a	r		q / .	: / -	Quadrats	

UPPER CASE.—*(When the Double Letters were discarded.)*

A	B	C	D	E	F	G
H	I	K	L	M	N	O
P	Q	R	S	T	V	W
X	Y	Z	Æ	Œ	U	J
ä	ë	ï	ö	ü	—	—
1	2	3	4	5	6	7
8	9	0	ç	[illegible]	[illegible]	k

A	B	C	D	E	F	G
H	I	K	L	M	N	O
P	Q	R	S	T	V	W
X	Y	Z	Æ	Œ	U	J
à	è	ì	ò	ù	§	‡
á	é	í	ó	ú	‖	†
à	è	ì	ò	ù	¶	•

Lower Case.—*(When the Double Letters were discarded.)*

—	[	æ	œ	'	j		middle spaces	(	?	!	;		fl
& / hair spaces	b	e		d		e	i	s		f	g	thin / spaces	ff / fi
ffi / ffl	l	m		n		h	o	y	p	,	w	quadrats	quadrats
z / x	v	u		t		spaces	a	r		q / .	: / -	Quadrats	

Although we have given these cases as being those most in general use, yet it is necessary to observe, as we have before remarked, that they partially differ in many houses, particularly with respect to the spaces; formerly, one or two houses differed from the rest, but they have now altered them to the general plan.

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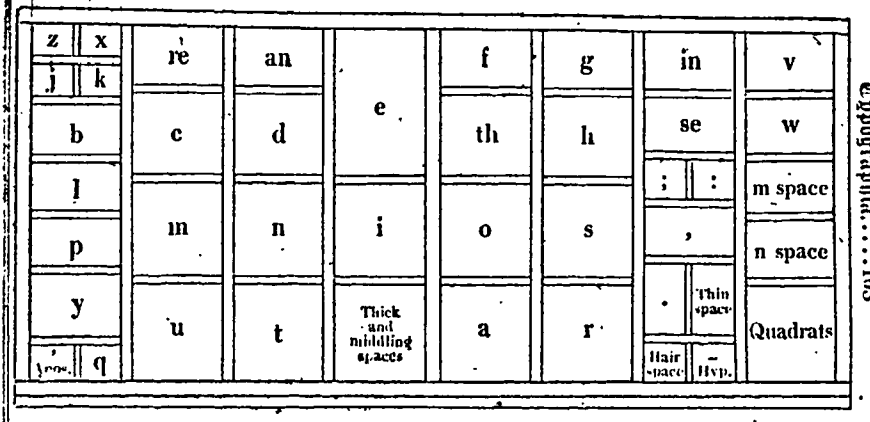
UPPER CASE.—*(Upon the late Earl Stanhope's Plan.)*

					☞	‖	X	Y	Z	1 m dash	2 m dash	J	U
					¶	‡	P	Q	R	S	T	V	W
					§	†	H	I	K	L	M	N	O
X	Y	Z	2 m brace	3 m brace	J	U	A	B	C	D	E	F	G
P	Q	R	S	T	V	W	3	6	9	[ ]	on		!
H	I	K	L	M	N	O	2	5	8	( )	of		&
A	B	C	D	E	F	G	1	4	7	0	to		?

Lower-case.

LOWER CASE.—*(Upon the late Earl Stanhope's Plan)*



We beg to call the reader's particular attention to the typographical execution of the cases upon the late Earl Stanhope's plan, which, certainly, must be acknowledged a great curiosity in the art; we could expect no less from the joint abilities of his Lordship and his compositor, Mr. James Fergusson: to them time was no object, and to their united talents were added a machine peculiarly adapted for cutting rules, which had cost his Lordship an immense sum; this was an advantage not possessed by any printer. These cases, with the following remarks, were printed in one large octavo page;—

First. The nine logotypes now in use are omitted. They are proposed to be printed with separate types, thus: ff, fi, fl, ffi, ffl, &c. instead of ff, fi, fl, ffi, ffl, &c. And the Italic thus: *ff*, *fi*, *fl*, &c. instead of *ff*, *fi*, *fl*, &c. In 20 pages of Enfield's Speaker, (namely, from page 71 to 90, both inclusive,) those logotypes occur only 95 times, viz.

PRESENT LOGOTYPES.

ff	fi	fl	ffi	ffl	Æ	Œ	æ	œ	Total,
28	51	10	4	2	0	0	0	0	95.

Secondly. Eight new logotypes are introduced. Their regular and frequent occurrence expedite the process of composition in a very considerable degree; for, in those same 20 pages, the new logotypes would save to the compositor no less than 3073 lifts, viz.

STANHOPE LOGOTYPES.

th	in	an	re	se	to	of	on	Total,
771	441	413	385	291	279	264	229	3073.

Thirdly. The introduction of the new logotypes, and the great imperfection of the various existing arrangements of composing cases, have caused the above new and very superior arrangement to be adopted.

Fourthly. The front side of each box of the lower case is made sloping, instead of upright; which shape is convenient both to the view and to the hand of the compositor, and it enables him to lift the types with the same rapidity and ease when the boxes are nearly empty as when they are full. The types are much better preserved from wear, by means of this shape. It also allows the lower case to be made deeper than usual; so that, two of them contain as much as three lower cases on the old construction. At the bottom of each box of the upper case, the internal front area is filled up.

The saving of time is of immense importance, especially in all cases where dispatch is particularly required. The new cases are, by experience, found to save full *one day* out of *six* to the compositor.

Fifteen boxes on the left-hand side of the upper case are represented empty. They are intended for the sorts which are sometimes used for particular works; such as, accented letters, mathematical marks, &c.

As the asterisk, or star, [*] is very liable to be filled with ink at press, it is intentionally excluded from among the reference-marks.

With all due deference to the great abilities of the late Lord S——and for whose bright talents no person could entertain a higher respect, yet, in this particular instance, we must beg to dissent from him: we feel persuaded, that his Lordship would not have presented these transmogrified cases as an improvement, if he had been possessed of a real practical, instead of a theoretical, knowledge of the art; In our humble judgments, even the old cases are far superior—they undoubtedly possessed much greater advantages; for instance, the apostrophe is nearer to the *d* and *s*, not thrown under hand in the

left corner; the *v* and *w*, whose stations were near the composing-stick, are placed *in* the *right* hand corner, and the semicolon is, unnecessarily, brought two removes from its old situation. We cannot see any advantage gained by the transposition of the *f*, *g*, *h*, *i*, *s*, *p*, and *y*, they unquestionably possessed stations equally advantageous upon the old plan. What greater proof of his Lordship's want of practical knowledge, than in his recommendation of the mixture of spaces? such an idea is condemned by all experienced printers. With respect to the logotypes, we discountenance them *in toto*, as we shall shortly explain. The re-arrangement of the capitals are not attended with the advantages which he anticipated; his idea was, that the *A*, *B*, *C*, &c. in the first row, are in greater request than the other capitals: now, we will ask, is not the *T* as frequently used as the *A*, or any other capital letter? and does not the *P*, *R*, *S*, *W*, as often occur, as most of the capitals of the alphabet? besides, even admitting it to be otherwise, is it not more natural that they should follow in regular succession, rather than run in a backward direction? Again, what greater impropriety, than that of placing the capitals and small capitals in an angular direction? Must it not tend to confuse a compositor, when he has to reach near double the distance for a small capital, that he has for a capital? The figures, instead of running from left to right (the most natural course), are placed in an ascending direction; surely they ought to follow in the same way as the capitals? Are the braces, by being brought near the hand, considered to occur more frequently than the dashes? So much for his Lordship's improvement of the cases!

We shall now offer a few observations upon the remarks of his Lordship:—*first*, he intended to

discard the double letters and diphthongs; to accomplish which he proposes to cramp the beak of the *f*, by which means he destroys its comely look, and gives it every appearance of a battered letter! If the diphthongs are to be thrown aside, how is the printer to manage with respect to Latin works, and particular words, in which they are indispensible?

Secondly. His Lordship here gives one example (probably selected) of the frequent occurrence of his eight logotypes, in which he states the immense saving to the compositor;* in this, again, we must beg leave to differ, because our experience tells us otherwise: even admitting it to its fullest extent, would the printer study his own interest by their adoption? would not the injury of one letter be the loss of two? where, then, would be the saving?

Thirdly. He next dwells upon the advantages of the logotypes and his improved cases, in preference to the old mode; this we have answered.

Fourthly. He then explains the nature of his improved cases, which are not only intended to contain more letter, but also *to save it from* wear; the cases may possess these advantages, but would they counterbalance the extra expense? the cases upon the present plan are found to contain sufficient, and what necessity is there for encreasing them?

We should be glad to know where they have been proved, "by experience, to save full *one day* out of *six* to the compositor?"

The spare boxes on the left-hand side evince his Lordship's want of practical knowledge; the compositor must lose a considerable time in the removal of the sorts, besides their liability to injury: and would not this system greatly tend to create pie?

* This logo system was once attempted at the Times office, but soon abandoned; it was found that the hands could get through more work by the old process, than by the proposed improvement.

UPPER CASE.—(*Upon J. Johnson's Plan.*)

⌒	⌃	¬	ç	—		–	.	..		℔	℔	£	℥	ā	ē	ī	ō	ū	ă	ĕ	ĭ	ŏ	ŭ	¼	2 braces	3 braces	4 braces
a	b	c	d	e	f	g	h	i	k	l	m	n	o	à	è	ì	ò	ù	ä	ë	ï	ö	ü	½	*	†	‡
p	q	r	s	t	u	v	w	x	y	z	&	æ	œ	á	é	í	ó	ú	à	è	ì	ò	ù	¾	§	‖	¶
A		B		C		D		E		F		G		A		B		C		D		Æ		F		G	
H		I		K		L		M		N		O		H		I		K		L		M		N		O	
P		Q		R		S		T		V		W		P		Q		R		S		T		V		W	
X		Y		Z		(	[	&	z	J		U		X		Y		Z		Æ	Œ	Æ	Œ	J		U	

Lower Case.—(*Upon J. Johnson's Plan.*)

1	2	3	4	5	6	7	8	9	0	'	j	?	!	;	ſt
x / q	b	c		d		e		i		s		g	f	ſſi / ſſl	ſſ / ſi
v	l	m		n		h		o		y	,	p	w	n quadrats	m quadrats
u		t		hair spaces / thin spaces	middle spaces	thick spaces		a		r		k / .	: / -	Quadrats	

It is not upon a theoretical opinion, but from practical experience, that we have here presumed to offer the schemes of our cases for the approbation of the members of the Typographic Art. This arrangement first took place when we set up our press (for a private purpose), at Lee Priory, in Kent, in 1813; since which they have been adopted in London, and their very great superiority has been acknowledged by all those compositors who have hitherto been employed at them; and we trust that their opinions will be further confirmed by the following remarks:—

By introducing the present [improved] schemes of our cases, we do not flatter ourselves that the plan will meet with even a partial, much less a general adoption. So powerful are the effects of prejudice in favour of old customs, that we are fully persuaded many would raise their *voices* against us, even though they should partially acknowledge the great advantages to be derived, both by the employer and the employed, from their adoption. We are far from imagining that the hints, which we have here ventured to suggest, respecting our arrangement of the types, is all that could possibly be wished, yet we feel pleasure in having advanced one step out of the beaten track, while journeying to the summit of perfection; therefore, we shall now leave the remainder of the task to be executed by more able *hands*.

It now becomes necessary that we should point out a few of the advantages resulting from the adoption of our cases, in doing which we shall not side with either party, being fully convinced, from their interests being so reciprocally blended together, that it is impossible for one party to receive a benefit without the other participating in it.

That we may not be charged with too great boldness in making the above assertion, we shall now instance a few examples, in confirmation of that doctrine: *First*—It will be seen, by the reference to the schemes of the old cases, that there are no compartments allotted for any of the following sorts: viz. *superior letters*, *longs* and *shorts*, *middles* and *corners* for braces, *m* and *n rules*, *m* and *dotted rules*, *braces*, *fractions*, ℔, lb, £, and &c.; these most useful and valuable sorts were always lodged in separate cases, and the compositor is obligated to quit his frame, whenever such sorts occur in the

course of his work: it most frequently happens, particularly in large establishments, that such extra cases do not remain for any length of time in the same situation, consequently, the compositor has the disagreeable task of searching for them imposed upon him; this is most commonly attended with a very considerable loss of time: but, what is still worse, after having at length obtained the object of his solicitude, to his great mortification, he finds it entirely stript of those very sorts in which he stands most in need. He then applies to the overseer, and informs him of his wants; when he very properly receives for answer, that such sorts must then be in the house, as they were recently used in such a particular work; he is then brought to this alternative, he must either search for them amongst the pie in the other cases, or, what is still worse, he must turn for them, in which case it not unfrequently happens, before his proof can go out, that he is requested to look for them again; the employer being unwilling to re-cast such materials, from a conviction that he once had them. At length, a considerable delay having occurred, the author becomes importunate and urges the printer, who is then necessitated either to cast or borrow them.

Secondly—In consequence of the above want of sorts, three parties are injured; namely, the author suffers a delay in the production of his work; the printer has his business retarded; and the poor compositor, who is least of all able to bear the burthen, has his valuable time unnecessarily frittered away! It will possibly be asked, what we conceive to be the origin of this evil? we can answer this question without the least hesitation—upon the present plan of the cases we can point out no remedy for the disease; it ever must occur, while any of the

boxes remain unoccupied: it is well known, that there are some compositors who will not stir out of their frames to convey to their proper stations, such extra sorts as may occur in the course of their distribution, consequently, they are thrown into the spare boxes; and it not unfrequently happens, even with the most careful, that such letters or words, which do not immediately belong to the case into which they are distributing, are placed for the moment in the vacant boxes, when, even by a shake of the frame or any trifling accident they get thrown down, it is a great chance if they are thought of more. The next person who uses the cases may do the same, or even worse, and thus the most valuable sorts become buried. Would it be reasonable to expect that a compositor, for the use of a pair of cases for a short period, should lose his time to clean them after another? By having the cases laid according to our plan, with every box filled with useful sorts, the compositor would find his advantage in keeping them clean; thus are their interest reciprocal, because the employer not only saves his money and forwards his business, but also the compositor the disagreeable labour and loss of his precious time.

It requires no argument to prove, that the shorter the distance the fingers have to reach, the sooner they grasp their object; consequently, those letters most in request cannot be brought too near the hand. Some may consider the distance from one box to another too trifling to demand our notice; so it really is, in an abstract point of view; but when that space, however short, is multiplied by the number of times which the hand has to traverse over the case in the course of one day, much less a week, it would make this comparative trifle amount to a space almost beyond credibility.

First—The transposition of the capitals and small capitals, from the higher to the lower compartments of the upper case, can scarcely be considered an alteration, although it is attended with considerable advantage, because we have not broke in upon their regular alphabetical arrangement.

Secondly—The introduction of the figures into the lower case, we feel persuaded, will meet with general approbation; although we are aware that some may raise an objection to our curtailment of the lower case e box, still in this instance it was indispensible: but all such objections can be very easily answered. It is well known that spaces must be removed when the case is filled beyond what the general boxes will moderately contain—and how much more trouble would it be at the same time, to take out a handful of e's, and place them upon a piece of paper under the frame? this, almost a momentary business, is all the labour that would be required to surmount every obstacle which might possibly be advanced on that score.

Thirdly—By dividing the three higher tiers of boxes in the upper case, we gain compartments over the small capitals for the whole of the accents, including both longs and shorts—for two, three, and four m braces, the six references, and the three first fractions. Over the capitals we have room for a complete fount of superior letters, middles and corners for braces, m and n metal rules, m and n dotted rules, ℔, ℔, £, and ☞; likewise the diphthongs, æ and œ;—by dividing the two boxes following the capital *Z*, we not only provide for the parenthesis and crotchet, but also the small *z*, and &; the removal of the *z* has made room for the *k* in the lower case, to which it more properly belongs, from its frequent occurrence. It will be observed, that by

dividing the two boxes between the small capitals, *z* and *j*, we make room for the capital and small capital diphthongs—thus, every box being supplied with useful sorts, the former receptacles for pie are no longer to be found.

Fourthly—The boxes in the lower case formerly appropriated for the *v*, *x*, *z*, are thrown into one, in which we have placed the *u*; the *t* is removed into the old station of the *u*; the *t* box is separated into three compartments, for the purpose of containing the middle, thin, and hair spaces:—the double fi and fl boxes are made one, into which are deposited the *v*—the fi box receives the *q*, which is removed nearer to the *u*, because the latter always follows the former—the old & box admits the *x*, and the *k* occupies the vacant *q* box—the fi and fl are lodged in the old ff and fi boxes—the points are removed one degree to the right, that is, the semicolon takes the place of the discarded fl—and the apostrophe and *j* are deposited over the *s* box:—thus we have completely filled every box of the lower case.

Having briefly explained the few alterations which we have thought proper to make in the arrangement of the cases, in proof of which we beg leave to offer some further remarks respecting the disposition of the various spaces. It will be seen, that when the long s, &c. were used, only one of the quarter boxes was allotted for *middle*, *thin*, and *hair spaces*, which were placed in the upper case; so that, admitting it to have been capacious enough to contain them, the compositor was obliged to reach over the lower case with every space, when justifying his lines: this, unquestionably, occasioned considerable delay; to remedy which, on the abolition of the long s, &c. each compositor suited his particular fancy, by putting them in one

or other of the spare boxes; yet this only partially remedied the evil, because the spaces were still distant from each other, whereas they ought to have been close together to be of real advantage. Considering the number of times which a compositor has to change his spaces in the course of only one day, and that, for every one of them his hand must cross the case in different directions, because they are laid in a trian ular form, this must strike even a casual beholder, much less a practical printer, as being attended with a very considerable unnecessary waste of time. There are compositors, particularly many of those employed upon newspapers, who accustom themselve to distribute nearly the whole of their spaces into one box—by this mode they consider that time is saved in composing; well it may, when they pay little or no regard to even spacing—to such men, no distinction of spaces are known, thick, middle, thin, hair, and even a quadrats, are indiscriminately jumbled together, and whichever happens to lie uppermost goes first into the composing-stick, and this is probably followed by one of a much smaller size; should these spaces fill out the line, he proceeds on, if not he changes a few of them, these he has to search for out of the general vortex: such a slovenly practise cannot be too strongly reprobated. The bringing all the spaces close together, under the hand, is, of itself, sufficient to guarantee any other alterations which we may think proper to make, even admitting that such alterations fell short of the advantages which we had before anticipated. It is upon this score that we rest our claim to indulgence, for having presumed to set up our humble ideas, in opposition not only to the present printers, but also to those deceased worthies from whom we derived our knowledge of the Art.

Improved Fount Upper Case.

7		8	9	0	J	U	X	Y	Z
5	6	A	B	C	D	E	F	G	
3	4	H	I	K	L	M	N	O	
1	2	P	Q	R	S	T	V	W	

Improved Fount Lower Case.

æ	z	k	e	j	q	-	[	)
b	c	d		i	f	g	&	!
							'	?
l	m	n	h	o	y	p	.	:
								;
v	u	t	s	a	r	w	,	

LAYING OF CASES.

THIS process consists in filling the cases with the respective sorts contained in a new fount of letter.

After having ascertained the weight of the fount, and provided ourselves with a sufficient number of cases and a fount case, we begin to lay the letter, filling each box moderately (including the fount case) with its proper sort; after which we deposit the remainder in coffins, when they are either put in baskets, or placed in some convenient place till they may be wanted.

It is confidently hoped, that the plan of the fount cases here presented will be received as an improvement, in preference to the old ones: the principal fault in the latter consisted in their being made too deep for their width, thereby rendering it difficult, and in some instances almost impossible, for a man to take out the sorts from the small boxes, and particularly when near the bottom.

By making fount cases longer and wider, the boxes are enlarged, and as spaces and quadrats are kept in drawers, and the long *s* being now generally discarded, the parts allotted to their use may be otherwise appropriated.

The capital fount cases are differently constructed; it but seldom occurs that either small capitals or accented letters require more room than the common cases supply, therefore it is only necessary to provide for the capitals and figures; consequently the boxes may be made larger, by which means they will not only contain more letters, but the sorts can be more readily taken out.

As new letter is very liable to stick, after having been wetted, it would be advisable to sprinkle it with a little strong soap water, which would greatly tend to prevent such unpleasant consequences.

DISTRIBUTING.

DISTRIBUTING, or conveying the different sorts of letter to their respective compartments, is generally the first of a compositor's practical exercise; though it would be found more advantageous to master and to man, were this custom sometimes reversed, and composing made antecedent to distributing, which depends upon a perfect knowledge of what is contained in each of the different boxes in a pair of cases. But as the arrangement of sorts differs, in some degree, in almost every printing-office, it follows, that such irregularities must have their effects accordingly; of which we do not want for instances. The first that offers itself to our observation, is the loss which a compositor sustains every time he changes his place of work; for, being unacquainted with the situation of each sort, he is hindered, for some time, in his quick and ready way of distributing, which might be easily prevented, were establishers of new houses to follow one uniform method.

Other evils result from this want of uniformity, which, as we have before observed, equally affect both the employer and the employed. Some compositors, rather than charge their memory with the different situations of particular sorts, transpose them into such boxes as contained them at their last place of work, consequently the situation of the letters, in that Roman case at least, is destroyed, and the transposed sorts not being replaced, the boxes become receptacles for pie; for the right sorts being distributed at the top, the undermost are rendered useless, because they are not expected to lodge in quarters that were not assigned them; therefore, if the hidden sorts happen to run short, they must be re-cast.

It would be the means of preserving a clean pair of cases, were they filled and provided with letter for a new compositor to begin his work upon, that by composing first, he might become acquainted with the contents of his boxes, and be better prepared for distribution; but as few compositors feel inclined to quit the beaten track, and as a difficulty would occur in compelling them to leave the cases as they found them, or if they did leave them full of letter, might distribute it carelessly, knowing they would not have to set it out again, the evil might be still far from being remedied.

To make a young apprentice the sooner fit for distributing, he should be informed that there are some letters that resemble others, and at the same time be shewn how to distinguish one from another; viz. *b* from *q*, *d* from *p*, *l* from *I*, *n* from *u*, &c. And in order to prove whether he has acquired a perfect knowledge of the distinction between such letters as have a similarity to each other, let the young compositor distribute a handful of broken matter into an empty case, and if, upon examination, the before-mentioned sorts are found in their proper boxes, he may be trusted to distribute for himself. But before he proceeds, he should be cautioned not to take up too much matter at a time, for, should he break his handful, he will have the less pie to clear. Even to those who are not likely often to meet with this accident, the caution is not unnecessary, as too great a weight weakens the wrist, and it is a mistaken notion that it saves time, for if one handful fall into the case, it will be more than equivalent to the time gained. When the accident does take place, the pie should be cleared away before anything else is done.

In taking up a handful, the head of the page

should be towards the distributor, which prevents the trouble as well as danger of turning it round, in order to have the nick uppermost. So much matter only should be taken up at a time, as can be conveniently held in the left hand, and not to be higher than the thumb, which guards the ends of the lines from falling.

He should be careful not to throw the letters into the case with their face downwards, as it batters them; neither should he distribute his case too full, for it invariably creates pie.

He should not be impatient to acquire a quick method at first; his principal study should be propriety, though his progress be slow; that attained, expedition will follow from practise, and he will find his advantage in composing from a clean case, though he may be longer in distributing it. A man loses double the time in correcting, that he imagines he saves from quick distribution.

With many compositors much time is unnecessarily lost in looking at the word before they distribute it. By proper attention, the learner may avoid this, and become, without the appearance of hurry, an expeditious as well as a clean distributor. To attain which, we would recommend him never to take more letter between his fingers than he can conveniently hold, and if possible, always to take an entire word; to keep his handful on an inclining position, so that the face of the letter may come more immediately under his eye. By proper attention and practise he will become so completely acquainted with the beard or beak of the type, as to know the meaning of the word he takes from his handful, with the cursory view he may have of it while in the act of lifting it.

It is to this method that so many in the business

are indebted for their expedition and cleanness in distribution; though to an observer the movement of their hands appears but slow. It is not to velocity of movement that compositors are indebted for their expedition, either in composing or distributing,—it is to *system*, without which their attempts may have the appearance of expedition, but produce only fatigue from anxiety and false motion. Therefore, to system we would particularly call their attention, and as clean distribution produces clean composition, which not only saves time at the stone, but acquires them a respectable name, they cannot be too attentive to that part of their business.

Another material point, before distributing, is the well-laying up of the form. In this particular many compositors are shamefully remiss, and from this negligence arise inconveniences that lose more time than if they had taken the first trouble, besides the unpleasantness of working with dirty letter.

The letter-board should always be kept clean, and the bottom as well as the face of the form well washed before it is laid on the board and unlocked, for if any of the dirt remain from the lie brush after it is unlocked, it will sink into the matter instead of running off. This precaution taken, the pages should be well opened, and the whole form washed till the water appears to run from it in a clean state. A form cannot be well laid up without plenty of water. If the form appears particularly dirty, it is best to lock it up again, which works out the filth; then rinse the bottom of it, and proceed as before. The letter once washed perfectly clean, by care may be kept so afterwards with little trouble.

Many compositors keep a piece of alum in their cases, in order to contract the grain of the skin of their fingers when distributing slippery letter; this

is a declaration of their want of cleanliness, for had they washed their letter properly, it would not be slippery.

It is sometimes necessary to dry the letter at the fire after distributing; it is particularly recommended not to use the letter after it is in this way dried till it is perfectly cold, as very pernicious effects arise from the antimony, which the heat of the fire brings into action, when joined to the tender particles of the skin. It is always better, where it can be conveniently managed, to distribute at night, or before meals, so that the letter may dry gradually.

Before we close this article, we beg to make an observation respecting the loss which compositors sustain from their not keeping Italic cases well supplied with letter; there are some men who would compose to the last letter out of the Italic case, and not think of distributing a word in; and that too, when they have Italic by them (out of their distribution), which it is their duty to put into the case; instead of which it is hoarded up, until they have got sufficient to make a piece for papering up. To remedy this evil, and place all men upon the same footing, we recommend to employers, or overseers, not to paper up Italic matter, but to insist upon its being distributed by the person who composed it: we are aware that objections may be raised against this mode, for instance, when matter is cleared away which is interlarded with the above, it would be extremely hard to compel a man to take out such words; that is not our intention, we mean whole lines, or *batches* of Italic, the rest may be papered up; and should the person who composed it remain in the house when the letter is again distributed, then such Italic should be turned over to him, when he will be able to fulfil his duty without any unne-

cessary labour; should the compositor have quitted the situation, then it ought to be replaced by some one on the establishment; if this plan were adopted, the compositor would have no occasion to search for the person who has charge of the letter, in order to obtain a small piece of Italic matter (possibly he has only a few words to compose), which must be distributed into empty, dirty cases, as few men will give themselves the trouble of blowing a pair cases for such trifles; therefore he has the disagreeable task of grubbing it out of the dirt at the bottom of the cases: how must such matter stand? and this very probably happens when a job is in a particular hurry; consequently it is not only a loss to the compositor, but a delay to the employer—here is another convincing proof that their interests are reciprocally blended together.*

COMPOSING.

COMPOSING is a term which includes several exercises, as well of the mind as the body; for when we are said to compose, we are at the same time engaged in reading and spelling what we have just suggested, we beg to observe, that it would be unjust to expect men to distribute the Italic (presuming the cases are empty), when they would be compelled to distribute it after composing, in which case they would make all the sacrifice; it ought to be done by some one upon the establishment; the employer being best able to bear the loss in the first instance, in consideration of the advantages which he may afterwards receive.

* It is our utmost wish, in whatever we may advance, that it be considered as our impartial and unbiassed opinions: therefore, to prevent any controversy respecting what we have just suggested, we beg to observe, that it would be unjust to expect men to distribute the Italic (presuming the cases are empty), when they would be compelled to distribute it after composing, in which case they would make all the sacrifice; it ought to be done by some one upon the establishment; the employer being best able to bear the loss in the first instance, in consideration of the advantages which he may afterwards receive.

specting the width and length of the page; whether it is to be leaded, and with white lines between the breaks; and whether any particular method is to be followed in the punctuation and in the adoption of capitals. These instructions being given, the compositor will make his measure to the number of Pica m's directed, which is done by laying them flat-ways in the composing stick, and then screwing it up, not too tight, as that is apt to strain it, nor so slack as to allow the measure to give. He then fits a setting rule to the measure, and his case being supplied with letter, he is prepared for composing.

If the copy he is to begin on be a re-print, he will observe whether there be any difference between the type he is about to use and the copy, so that his spacing may not be affected, against which he must take the necessary precautions at the time, by widening or lessening his measure, if solid matter, or driving out or getting in each paragraph, if leaded. He should select a close spaced line from the copy, which will at once prove if there be any variation.

It is necessary to observe, that all measures are made to Pica m's, though the work may be printed in a different sized type; and that all leads &c. are cast to m's of the above body: which regular standard is not only acknowledged and abided by in England, but also in every part of Europe.

It requires little argument to prove the advantages resulting to all parties from the adoption of a regular standard; because the employer has no occasion to cast leads to every size, for, by means of piece leads he is enabled to make all measures, and they particularly assist the compositor when setting jobs, &c.—The following Table will shew, with how few sizes most measures can be made:—

Table, exhibiting a combination of leads, from eleven m's to fifty, with only three pieces, and from fifty to one hundred, with only six pieces in a line.

4, 7, 9, 13, 15, 20.

7	4	13	7	15	9	13	9	15	20	7	15	15	20	9
4	4		7		7	4	9	4		7	7	4	4	9
	4									7		4		7
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
13	20	15	20	15	20	15	20	15	20	20	15	20	15	20
13	7	13	9	15	7	13	13	15	15	9	15	9	15	20
					4	4		4		7	7	9	9	
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
15	20	15	20	15	20	20	20	20	20	20	15	20	20	20
13	15	15	20	15	13	20	15	20	15	20	15	20	20	20
13	7	13	4	15	13	7	13	9	15	7	15	13	7	15
										4	7		7	
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	15	20	15	20	20	20	20	20
9	13	9	15	20	7	13	15	15	15	13	20	15	20	15
7	4	9	4		7	9	13	9	15	13	7	13	9	15
					7									
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	15	20	20	20	20	20	20	20	20	20	20	20	20	20
20	15	20	20	20	20	20	20	20	20	15	20	15	20	15
7	15	13	7	15	9	13	9	15	20	13	15	15	20	15
4	7		7		7	4	9	4		13	7	13	4	15
71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
20	20	20	20	20	20	15	20	15	20	20	20	20	20	20
13	20	15	20	15	20	15	20	15	20	20	20	20	20	20
13	7	13	9	15	7	15	13	15	15	9	13	9	15	20
					4	7		9		7	4	9	4	
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Being now provided with a case of letter, and all the requisites for composing, we examine the copy, to ascertain if it be written fair and legible, and spelled and pointed according to the modern way. Upon this subject Smith thus remarks:—

"If therefore it happens that the copy turns out to our liking, we wish the work to last long; whereas if it proves otherwise, we are glad to have done with it, especially if the author should chance to be a humourous gentleman, and unacquainted with the nature of printing; for then *a compositor is obliged to conform to the fancy of his author, and sometimes to huddle his work up in such a manner as exposes both him and his master; whereas the gentleman that pursues the elaboration of his plan, and leaves the gracing of his work to the judgment of the printer, seldom finds room to be dissatisfied upon* that *score.*

"By the laws of printing, indeed, a compositor should abide by his copy, and not vary from it, that he may clear himself, in case he should be charged with having made a fault. But this good law is now looked upon as obsolete, and most authors expect the printer to spell, point, and digest their copy, that it may be intelligible and significant to the reader; which is what a compositor and the corrector jointly have regard to, in works of their own language, else many good books would be laid aside, because it would require as much patience to read them, as books did when no points or notations were used; and when nothing but a close attention to the sense made the subject intelligible.

"Pointing, therefore, as well as spelling and methodizing some authors' copies being now become part of a compositor's business, it shews how necessary it is for master printers to be deliberate in chusing apprentices for the case, and not to fix upon any but such as have either had a liberal education, or at least are perfect in writing and reading their own language, besides having a taste of Latin, and some notion of Greek and Hebrew; and, withal, discover a genius that is capable of being cultivated and improved in such knowledge as contributes to exercise the Art with address and judgment. Had this been always the aim and object of the planters and nurses of our art, printing would make a more respectable figure, and be more distinguished

from mechanical business. But the hopes of gaining by apprentices, makes some (master) printers not concern themselves about capacity, but are contented with a lad that can read in the Bible, whom they think sufficiently qualified to compose street-pamphlets and half-penny volumes. In the mean time the young man is injured: for, being out of his time, he is thrust upon the trade, empty and ignorant of what is required of a good workman." *

* A most pernicious and destructive system has, of late years, crept into the profession; we allude to the practise of taking out-door apprentices, which is most commonly fraught with evil consequences, of which we have had numerous examples. How, let us ask, can it possibly be otherwise, when a master fills his house with out-door apprentices? It is well known that one scabby sheep will infect a whole flock: and is it not a fair conclusion, that, amongst a number of boys, one, or even more, may be of loose habits? Still, looking at the favourable side of the picture, we will admit them all to be good for a time, but when they are left to themselves, as they consequently must be where there are few men, it being impossible that a master's eye can be continually observing them; and admitting that there should be one or two men, can it be expected they will take any pains or charge of them, when they have not the least interest at stake? In such cases, we have found that the boys are not regularly initiated by men, but an elder boy takes a junior under his care: we have seen instances, in which the instructor has known very little more than the first rudiments of the art. Such bringings up has been very properly termed 'running upon the warren;' and as boys are naturally prone to idleness, and not having sufficient examples of industry daily before their eyes, little good can reasonably be expected from them, longer than the coercive rod hangs suspended over their heads; this may check and restrain them while under the master's care, but when turned out at meals, or at night, they then give full vent to those boyish foibles, which naturally increase with their years: added to this (and truly lamentable is the case), they have frequently such a stimulus to wrong, by the pernicious examples of those with whom they associate, that they are led imperceptibly, step by step, till completely involved in a vortex of crimes, which frequently terminate in an ignominious end, of which the Old Bailey Calendar furnishes but too many dreadful examples. To the system of taking out-door apprentices, and the mode of bringing them up, must be attributed most of those scenes of early depravity which are daily to be witnessed in the metropolis. This can never be prevented while out-door apprentices are taken in such hosts, and who have scarce any check upon their early conduct. They should be placed under men, and the number of the latter ought greatly to preponderate; if this were the case, a man would feel it his duty to keep a watchful eye upon the future actions of his early charge, even after he is supposed to have done with him. We differ in opinion with those masters, who imagine that they ultimately gain by the employment of apprentices only: if the trouble and anxiety of mind, and the consequent destruction of materials are taken into account, the balance would not preponderate so strongly in the master's favour; but

Having taken particular notice of the state of the copy, and received directions respecting the method to be adopted in the execution of it, he then commences his work. It will not be improper to point out in this place, what we have before observed, that an ill habit once acquired, is with great difficulty shaken off—truly ludicrous are the attitudes and motions exhibited by some compositors, while performing the operation of composing; such as, nodding the head, agitating the body, throwing out the arm, ticking the letter against the case or the setting-rule, with numerous other false movements, which not only lose time, but fatigue the mind, and exhaust the body. The swift movement of the hand is not always a just criterion of the quick progress of a compositor. In proof of which, the following anecdote is given:—

"A gentleman, some few years back, not a professed printer, though the proprietor of an extensive concern, gave orders to his overseer to discharge a compositor who had not the appearance of moving his arm so quick as others in the office with him; but his overseer was able to convince him that this man was not only the neatest, but the most expeditious, and consequently the most valuable, man in his employ."

The left hand, which contains the composing stick, should always follow the right, which takes up the letters. If the former be kept stationary,

they seldom look at the waste of letter, paper, and the readers' time, although they are of the greatest moment. Again, when such boys are *out of* their time, how hard is it for *good workmen* to be burthened with them for companions, in which case they must either assist their defects, or be retarded in their own progress. In our humble opinions, it is as much the duty of those who take boys under their care to watch and guard their morals, and train the tender shoot in a right course, as it is to instruct them in their business; and it is quite impossible for them to fulfil this task, unless they are completely under the master's eye; therefore we most strongly advise a discontinuance of so destructive a system. Seriously considering the above examples, What then, let us ask, must be the situation of those masters, who, blinded by sordid feelings of gain, draw upon themselves this awful responsibility!

considerable time is lost in bringing each letter to the stick, because the latter would, consequently, have to traverse a much greater space than is necessary: the eye should instantly precede the hand, being steadily fixed upon that particular letter which lies with the nick from you, which should be taken up by the upper part; this would effectually prevent any false motion, and preclude the necessity of turning the letters when in the hand. A sentence of the copy should be taken, if possible, at one time, and while putting in the point and space which concludes that sentence, the eye is at full liberty to revert again to the copy, for a fresh one. It is to perfection in this particular, that those compositors who are so much admired in the profession, are indebted for their swiftness. The time thus gained is very considerable, without the least appearance of bustle or fatigue. By their taking a sentence into the memory at one time, they preserve the connexion of the subject, which renders the punctuation less difficult.

The compositor, from habit, becomes so well acquainted with the peculiar feel of each type, that he can generally detect a wrong letter without looking at the face. Those who are careful in their distribution, find the advantage of it in composition. What greater disgrace can attach to a compositor, than being denominated a foul or slovenly workman? To avoid this stigma, he should use his earnest endeavour; it would even be better that he should read every line as he composes it, than to lose so much of his time at the stone, independent of the disgrace just mentioned. If he accustom himself to glance his eye over each line, as he justifies it, he will find it turn greatly to his account, without the least impediment to his usual progress.

Uniformity in spacing, unquestionably, is a most important part of the compositor's occupation; this requires both care and judgment, and, therefore, cannot be too strongly impressed upon the mind of the young beginner. Close spacing is equally unpleasant to the sight as wide spacing, and ought never to be permitted, except in very narrow measures; and frequently, even then, with care it might partly be prevented. What is commonly called the composing space, is the best and proper separation between each word; though this rule cannot always be adhered to in narrow measures, when large type is used. It is not merely necessary to have a line here and there uniformly spaced—a careful compositor evinces an anxiety to give every page that uniformity of appearance, in which consists one of its chiefest excellencies. Careless and foul compositors will never preserve this most desirable uniformity; because, when their proof is crowded with corrections, the utmost possible care in rectifying those blunders, will not make the spacing regular. Therefore, we wish to impress this important maxim upon the mind of the young beginner: that it is better to do little, and to be determined to do that little *well*, than to be anxious to put together a great number of letters, without any regard to accuracy and uniformity. Authors, certainly, should send their copy *finally* corrected to the press; for when alterations and additions are made in the proof sheet, it becomes difficult, where there are few paragraphs, to make the spacing equal.

In correcting, many compositors do not over-run the matter through the stick, as they ought to do, but prefer doing it on the stone, in which case they not unfrequently hair-space, or treble space, in order either to get in or drive out a word; when,

by over-running a line or two forward or backward, they would not only preserve uniformity, but also save considerable labour.

In a late work upon this subject, we find a mixture of all the spaces (except the hair space and n quadrat) strongly recommended, in which it is urged that it would expedite the compositor in his justification—in this instance we must differ, and shall ever contend against any advantage being derived from so slovenly a practice.

Where a line is even spaced, and yet requires justification, the additional spaces should be put between those words in the line where it will be least observable, *viz.* a *d* and an *h* being perpendicular letters, will admit an addition, but not more than a middle and thin space to a thick spaced line; or, after a kerned letter, the beak of which may bear upon the top of an ascending letter, as the *f* and the *h*, *i*, *l*, &c. but not always after a kerned letter, as the *f* and the *w*, where the distance would be too conspicuous, which is one reason why an n quadrat should not always be placed after an *f*, as was formerly directed.

The same rule should be observed where it may be necessary to reduce the spacing of a line; less space being required after a sloping letter than a perpendicular one, the comma requires only a thick space, but the other points should have a hair space before, and an n quadrat after them,* except the full point, which should have an m quadrat, as ter-

* It is well known that founders pay little or no regard as to the thickness of the points, in some founts they run very thick, and in others as thin: the former will do without any space before them; consequently, the compositor's judgment must be exercised in this particular. We recommend the founders to cast the points and division rather thin, as they would assist the compositor in his justification. While we are upon this subject, it will not be improper to remark, that we conceive the points would be improved if they were not made so tall; they ought not to exceed the height of the letter t.

minating a sentence. Still this rule will not always hold good, it must depend entirely upon circumstances, for, should it be necessary to reduce the spacing, those spaces after the points must also be altered in the same proportion.

To such regular gradations are spaces now cast, that the compositor can urge no reasonable excuse either for bad justification or improper spacing.

Having sufficiently touched upon the above most essential *points*, we shall now proceed:—Should the length of the page be left to the compositor's discretion, he then sets such a number of lines as he conceives to be a proportioned page, this is generally taken at double the width; he next puts in the head and direction (*if* any), and cuts an exact gauge.* This is done before he makes up the first page, as that will vary according to the different founts which are necessarily introduced.

Head-lines are generally set in small capitals of the same fount, or in italic. Capitals of letter about three sizes smaller than the body of the work, with folios of a proportionable size, have a much neater appearance than either of the foregoing. If only folios are placed at the top of the page, it is better to make use of full-faced figures, without parentheses or crotchets.

Direction-words at the bottom of the page are not now generally used; the omission of them does not injure the appearance of the work, but saves time and expense where overrunning occurs in the proof; nevertheless, in making up the page it is

* A proper gauge should be made as follows:—after having marked off the length of the page, we then, with a sharp penknife, make a light mark at the bottom of each line, commencing after the first: these marks are of the greatest service to a neat compositor, he is thereby enabled to make up his work with greater certainty and less trouble, particularly when the work consists of light matter, heads, sub-heads, quotations, &c. &c.

necessary to substitute a white line for the signature, volume, &c. Also, in twelves and eighteens, two white lines should be added to the page, one for the signature, and the other for convenience in case of outs, or additions from the author; but it should be observed, that the extra white line must be allowed in the gauge of the furniture, and not cast up in the price of the page.

Much trouble and loss of time was formerly experienced by compositors, in making up the first page of a work, when they had to introduce head-pieces and facs, formed with flowers of different bodies. This taste for flowery decoration is now exploded, and it is only necessary to set the title to the first page of the work, in a neat type, suitable to the sized letter in which the work is composed, say one, or two sizes smaller than what is intended for the general title.

On beginning a work, the compositor should be informed what number of volumes it is intended to be comprised in, in order that he may place the number of the volume in the left hand corner of the signature line, in the first page of every sheet. The above and the signature are generally put in small capitals; and where they extend to more than one alphabet, the second one should begin, ^{2}A, ^{2}B, and so on. In our opinion the signature is much better both in appearance, and for collating, when placed within about four m's from the end of the line, than in the centre, according to the old custom.

The title, preface, &c. of a volume is always left till the body of the work is finished, as many circumstances may arise in the course of its progress through the press, which may induce the author to alter his original preface, date, &c. or the work may conclude in such a manner as to admit of their being

brought in at the end, in order to complete a sheet, which may save both paper and press-work. For this reason it is customary to begin the first sheet of every work with signature B, leaving A for the title sheet. To a sheet of octavo, two signatures only are necessary, which are placed to the first and third pages; to a sheet of twelves three signatures, to the first, third, and ninth pages, thus, B, B 2, B 3.

In magazines, and works of that nature, printed in half sheets, figures are sometimes put instead of letters. This plan is considered to cause less confusion with the binder, particularly in works of five or six hundred pages.

Instead of beginning the work with a two-line letter, (according to the old custom) small two-line letters have a much neater appearance; they are made to range with the beard of the letter at the bottom of the line, and to stand above it; the remainder of the word may be put either in capitals or small capitals, the latter is most preferable.

We now proceed to the second page, and set the running title in a neat letter proportioned to the size of the page; but this must be governed by the quantity of matter necessary to be introduced at the head of the page. A full line, as a running title, has a very clumsy appearance; and should, if possible be avoided. To a solid page, two leads make the usual space after the head; to a single leaded page, three leads or a Long Primer white; and to a double leaded page, a Pica white.

It has long been, and still is a practice too prevalent among compositors, to drive out a word at the close of a paragraph, or even to divide it, in order to reap the advantage of a break line. Part of a word, or a complete word in a break line, if it con-

tain no more than three or four letters, is improper. It should be the business of the corrector, at all times, to notice this encroachment. The last line of a paragraph should not on any account begin a page, neither should the first line of a paragraph come at the bottom of a page, if the work has white lines between the breaks. To obviate which, the compositor makes his page either long or short, as most convenient, always taking care that the corresponding pages back, by which means the long or short appearance of the page escapes observation.

If the work is very open, consisting of heads, whites, &c. the compositor must be particularly attentive to their depth; so that though the white may be composed of different sized quadrats, yet that their ultimate depth shall be equal to the regular body of the type the work is done in; for unless, care is taken in this particular, the register of the work must be incomplete. The pressman cannot make the lines back if the compositor is not careful in making up his matter.

The first line of a new paragraph is indented an m quadrat, of whatever sized letter the work may be; though we prefer an m and an n in small measures, and two or even three m's when the measure runs very long, by which means the paragraph is more strongly marked; the mere indention of an m being scarcely perceptible in a long line. Authors vary very materially in the mode of making paragraphs; some carry the argument of a position to a great length, before they relieve the attention of the reader; while others break off at almost every place that will admit only of a full point. But in this case we follow the author's plan, unless, upon particular occasions, it may be necessary to multiply or reduce the breaks in the copy, if it can be done

with propriety, in order to make the work look uniform. Authors should always make the beginning of a new paragraph conspicuous to the compositor, by indenting the first line of it far enough to distinguish it from the preceding line, in case it should be quite full.

Many hints, in addition to what have already been dropped, relative to composing, may be added for the information of learners, were we not persuaded that practice and a close attention to the mode of doing business by good workmen, will be of more service than a multiplicity of rules. It is the duty of the person under whose tuition an apprentice is placed, to discharge that trust with fidelity. The youth's future prospects in life depend in a great measure on the principles on which his first instructions are formed; and it is the duty of every man to correct those habits in youth which may be improper, whether arising from carelessness or any other cause. When a youth makes choice of a profession, and is aware that his future support and prospects in life must depend on a correct knowledge of that profession, he should be anxious to attain that knowledge; to withhold it, therefore, from him, or not to check him for improper habits, is both unpardonable and unjust.

After the body of the volume is completed, the contents sometimes follow next, though they belong more properly to the beginning of the work; and for this reason we shall defer speaking of them here, but introduce them in their proper place. The index is generally placed at the end of the volume, and set in letter two sizes less than that of the work; it is always begun upon an uneven page. Running titles may be set to an index, but folios are seldom put to them, unless it is to recommend the book for

its extraordinary number of pages; for as an index does not refer to its own matter by figures, they are needless in this case. The signatures, however, are always carried on regularly to the last whole, or half sheet of the work.

It was formerly the plan to set the subject word of each article in Italic, and all the rest in Roman, indenting all the matter an m quadrat* that makes above one line, what is technically termed—to run out and indent; but the Italic is now in a great measure exploded, it being attended with extra trouble, and at the same time destroys the general uniformity of the page.

Care should be taken that the subject words are ranged alphabetically, as it is not expected that the compositor will transpose his matter afterwards, which is attended with a considerable loss of time, without being paid for it.

Where figures have a *regular succession*, a comma is put after each folio; and where their order breaks off, a full point is used. Thus, for example, after 6, 7, 8, 9, commas are put; and after 12. 16. 19. 24. full points; but to save figures and commas, the succession of the former is noticed, by putting a rule betwixt the first and last figures, thus, 4—8. Again, if an article has been collected from two pages, the folio of the second is supplied by *sq.* or *sequente*; and by *sqq.* or *sequientibus*, where an article is touched upon in succeeding pages. A full point is not put after the last figures, because it is thought that their standing at the end of a line is a sufficient stop. Neither is a comma or a full point placed to the last word of an article, in a wide measure and *open matter*; but it is not improper

* Although it is the general custom to indent the second line one *m*, we always indent an m and an n, or even two m's, being of opinion that it not only looks better, but also marks it stronger.

to use a comma at the end of every article in narrow columns, or where figures are put after the matter, instead of running them to the end of the line.

At the conclusion of the index, the volume is considered as completed, with the exception of the title, preface, &c. A compositor's first consideration, then, is in what manner the work has ended, what number of pages the titles, &c. will make, and whether he can impose them in such a form as to save paper and presswork. To answer this purpose, a preface may be drove out or got in; or if matter is wanting, it is customary to set a half title.

The method of setting or displaying a title page is governed entirely by fancy; and in this country the style, of late years, is much altered for the better, as a comparison between the title pages of the last and present century fully evince. We concur in the assertion, that no fixed rules can be laid down for instruction, because it depends entirely upon the taste and ingenuity of the compositor; such being the prevalent opinion, we trust that we shall be pardoned for obtruding a few hints, which, in our judgments, may tend to assist the juvenile portion of the profession. *First*, having divided the title into lines, and decided upon the sized type most suitable for the principal one, we begin by composing those of the second and third class, both in ascending and descending order: *secondly*, we avoid having two lines of equal length to follow, or come in contact with each other; this evil is frequently remedied by the introduction of a line of Black, which has generally a good effect, particularly if it happens to be a short one: *thirdly*, catch words should be set on a very reduced scale, and proportioned according to the strength of the preceding and succeeding lines; because, when

catch words are bold, they take from the general effect of the title, it being impossible that it can appear to advantage if the striking lines, which ought to stand forward, are too much crowded by the full appearance of their neighbours' faces—*fourthly*, this knowledge will be best attained by a close attention to those title pages which are generally considered, by those who are judges, to be displayed with true taste and judgment.

The reader will be pleased to accept the following extract from Smith, as being apposite to the present subject:—

"For as to the title, it is a summary relation of the mean subject on which the work is founded: and though it consists but of one single page; yet to display its several members in such a manner that the whole may appear of an agreeable proportion and symmetry, is counted a masterly performance. And though setting of titles is generally governed by fancy: yet does it not follow that the excursions of every fancy should be tolerated, else too many titles would be taken to belong to chapmens' books. It is therefore proper that titles should have the revisal of one that is allowed to have a good judgment in gracing one. But to change and alter a title to the mere fancy of pretenders, is the ready way to spoil it. When, therefore, we go about a title, we consider as well the quantity as quality of our matter, that we may set out accordingly, and either branch our matter out to the best advantage, or else crowd it together by way of summaries; but which can not produce a handsome title. But where the matter for a title is so contrived that it may be divided, now into emphatical lines, and then into short summary articles, it is a compositor's fault, if his title makes no proper appearance."

We recommend to authors to consult with the printer upon the construction of their title pages—as they should neither be too long nor too short; because a crowded title can never be displayed to advantage, nor can too little matter form a handsome title; a printer must be the best judge as to what will produce what is termed, *a happy title!*

The dedication generally follows the title, and seldom exceeds one page. It should be set in capitals and small capitals, displayed in the manner of a title: but where it extends to a considerable length, it is generally set in a letter two sizes larger than the work. There is neither folio nor direction line required to it, where it does not exceed a page; but if it happens to be the third page of the sheet, the signature must be inserted.

Formerly, the preface was uniformly set in Italic; at present, this plan is seldom adopted, and Roman is used in its stead, of one size larger than the body of the work. The running title to the preface is commonly set in the same manner as those of the body of the work, at the same time the folios are put in numeral letters beginning with ii over the second page, and continuing the rest in the usual manner. If the work itself was printed with folios only, then the preface should have them also in the middle of the line.

The title, dedication, preface, introduction, &c. form what is called the title sheet, viz. signature A, which makes the printer's alphabet (consisting of 23 letters) complete, provided that the body of the work begins with B. To ascertain more readily how many sheets a book consists of, more than are marked with signatures in capitals or small capitals, a lower case Roman a is put to the first sheet, and thus carried on till the beginning of the body of the work.

What has been observed concerning prefaces, relates equally to introductions, drawn up and intended to elucidate their respective works.

The contents follow the preface or introduction, and are either set in Roman or Italic, generally two size smaller than the body of the work; the first

line of each summary full, and the rest indented an m-quadrat, with the referring figures justified at the ends of the respective lines.

The errata are put immediately before the body of the work, or at the end of it. It is most devoutly to be wished, that works could issue from the press perfectly free from errors; but we may exclaim with Pope:—

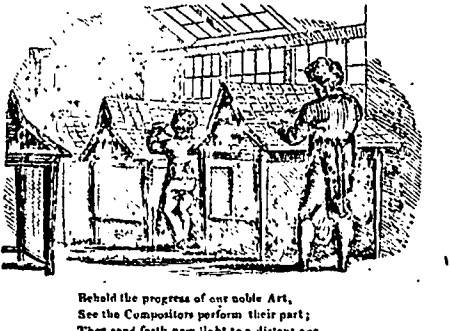
"Whoever thinks a faultless piece to see,
Thinks what ne'er was, nor is, nor e'er shall be."

Fewer mistakes would be made, were authors to endeavour to render their copy more legible, before they place it into the hands of the printer. It can hardly be expected that the corrector, under whose inspection such a variety of subjects are continually passing, should be able to enter thoroughly into every one of them, and to guess so nicely at the author's meaning when the copy is obscure, and unable to afford him any assistance.

In conclusion, the reader will be pleased to receive Smith's opinion upon this subject: he says,

"What still remains to be taken notice of, are the *Errata's*, which sometimes are put immediately before the body of the work, and at other times after the *Finis* of it. Sometimes they are put by themselves on the even side of a leaf, so as to face the title. But though this is very seldom done, it is pity that it should ever have come into the thoughts of any one to do it at all; for it is a maxim to bring Errata's into as narrow a compass as we conveniently can, and to put them in a place where they can make no great shew; since it is not to the credit of a book, to find a catalogue of its faults annexed. It is therefore wrong policy in those who make Errata's appear numerous and parading, in hopes of being thought very careful and accurate; when they only serve to witness an authors inattention at a time when he should have been of the opposite inclination. But the subterfuges that are used by writers upon this occasion, are commonly levelled at the printer, to make him the author of all that is amiss; whereas they ought to ascribe it to

themselves: for, were gentlemen to send in their copy fairly written, and well corrected and prepared for the press, they would have no occasion to apprehend that their work would be neglected, were they to leave the whole management thereof to the printer, especially when it is written in his native language. But bad copy, not revised at all by the author, is one obstacle; and altering and changing the matter after it has been composed, is another means that obstructs the correctness of a work; not to mention the several accidents to which it is exposed before it has passed through the hands of a pressman. It would therefore be generous in gentlemen to examine the circumstances that may have occasioned an error, before they pronounce it a typographical one: for whoever has any ideas of printing, must consequently know that it is impossible to practise that art without committing errors; and that it is the province of an author to rectify them. For these several reasons it will appear how material it is not to make an erratum of every trifling fault, where the sense of a word cannot be construed to mean any thing else than what it was designed for; much less to correct the punctuation, unless where it should pervert the sense."



Behold the progress of our noble Art,
See the Compositors perform their part;
They send forth new light to a distant age,
And in clear print *set* the historic page!
Recording deeds of honour and disgrace,
Which neither Age nor Time can e'er efface.

CHAP. VII.

IMPOSING.

HAVING sufficiently treated (in the preceding chapter) upon the principal subjects connected with the department of composing, it next becomes our duty not only to lay schemes of the various impositions before our readers, but also to endeavour to give a general outline for the imposition of whatever odd matter there may be at the conclusion of a work; and likewise to explain, in as clear a manner as possible, every point connected with this important branch of the art.

This article not only comprehends a knowledge of placing the pages so that they may regularly follow each other after they are printed off, and the sheet folded up, but also the mode of dressing chases, and the manner of making the proper margin.

We will suppose that a compositor has got up as many pages as are required for a whole sheet, half sheet, or such portions of a sheet, of whatever size; after having prepared the stone for their reception, by removing any dirt or other obstruction, he begins to carry the pages from under his frame, and lay them upon the imposing stone, taking particular care to place the first page in its right position, with the signature to the left hand facing him, according to the following schemes, which, it is hoped, will be found to contain every necessary imposition; they consist of folios, quartos, octavos, twelves, sixteens, eighteens, twenties, twenty-fours, thirty-twos, thirty-sixes, forties, forty-eights, sixty-fours, seventy-twos, ninety-sixes, and one hundred and twenty-eights.

ABSTRACT TITLE DEEDS OF ESTATES.

1

Abstract Title Deeds of Estates are printed with blanks at the back, with all the margin on the left side and on single leaves, which are stitched together at the corner.

This method of imposing the form is to save press-work, & the compositor's charge.

Lock up.

Lock up.

8

A SINGLE SHEET IN FOLIO.

Inner

Form.

2

3

1

Outer

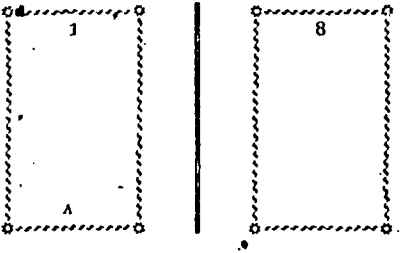
Form.

4

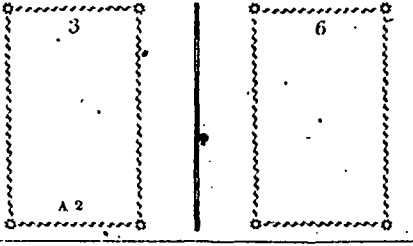
A

Two Sheets in Folio, Quired,† or lying one in another.

Outer Form of the Outer Sheet.



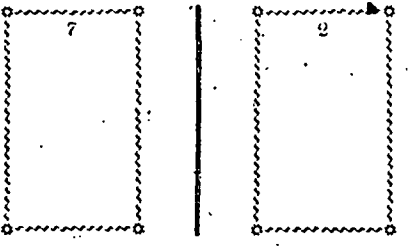
Outer Form of the Inner Sheet.



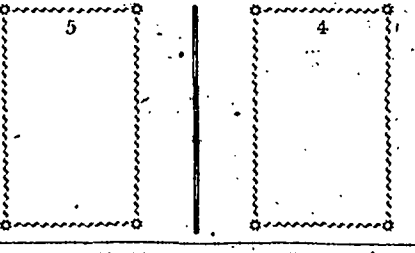
† Imposing in quires may be carried on to any extent, by observing the following rule:—first, ascertain the number of pages, then divide them into so many sheets of folio, and commence laying down the two first and two last, which form the first sheet, and so on to the centre one, always remembering that the odd pages stand on the left, and the even on the right; the folios of each two forming one more than the number of pages in the work: for example, let us suppose the work to consist of thirty-six pages, which is nine sheets

Two Sheets in Folio, Quired, or lying one in another.

Inner Form of the Outer sheet.



Inner Form of the Inner Sheet.

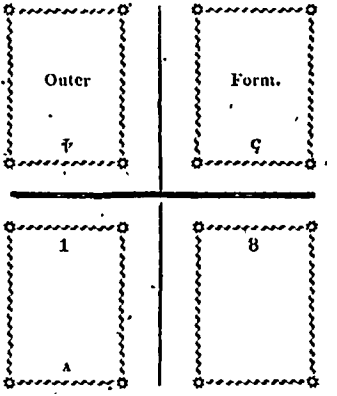


of folio, then they should be laid down according to the following scheme:

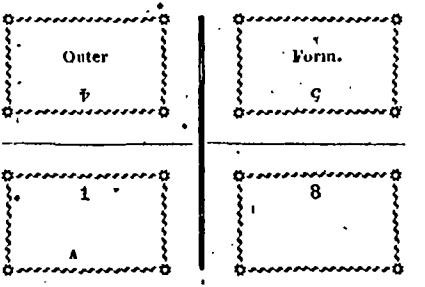
Outer.	*Inner. Sheet.*	*Outer.*	*Inner. Sheet.*	*Outer.*	*Inner. Sheet.*
1--36	35--2, first,	3--34	33--4, second,	5--32	31--6, third,
7--30	29--8, fourth	9--28	27--10, fifth,	11--26	25--12, sixth,
13--24	23--14 seventh,	15--22	21--16, eighth,	17--20	19--18, ninth.

The furniture must be reduced in the backs of the inner sheets, to allow for stitching.

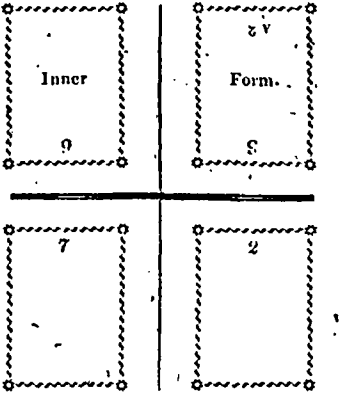
A Sheet of Common Quarto.



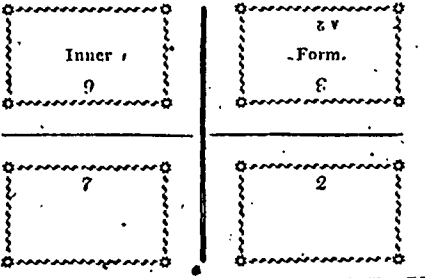
A Sheet in Quarto, the Broad Way, commonly used in Works of Music.



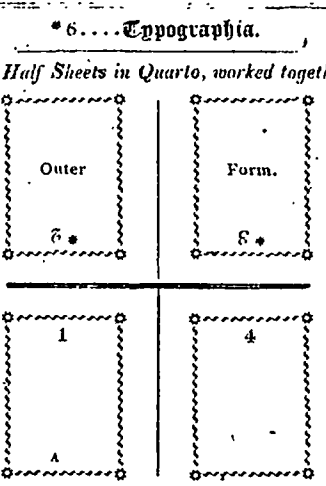
A Sheet of Common Quarto.



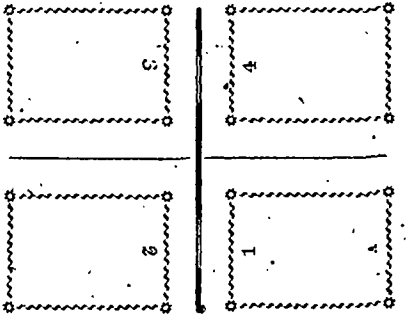
A Sheet in Quarto, the Broad Way, commonly used in Works of Music.



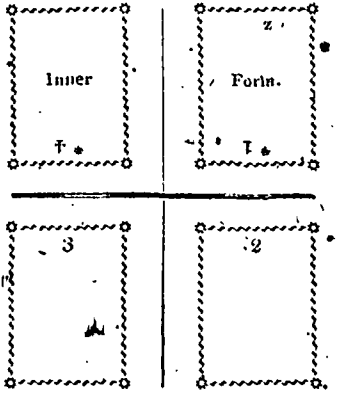
Two Half Sheets in Quarto, worked together.



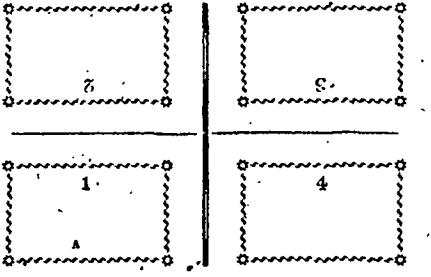
Half a Sheet of Common Quarto.



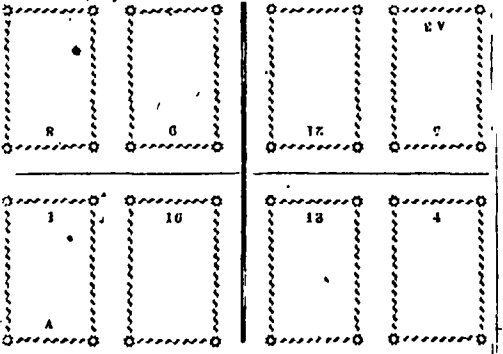
Two Half Sheets in Quarto, worked together.



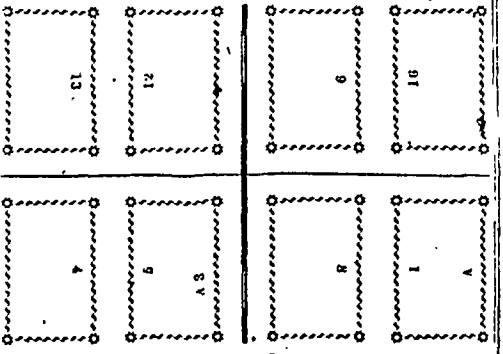
Half a Sheet in Quarto, the Broad Way.



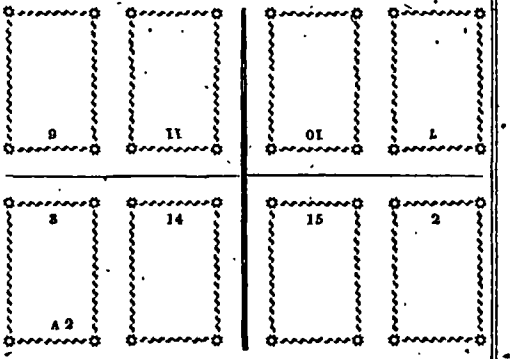
Outer Form of a Sheet of Common Octavo.



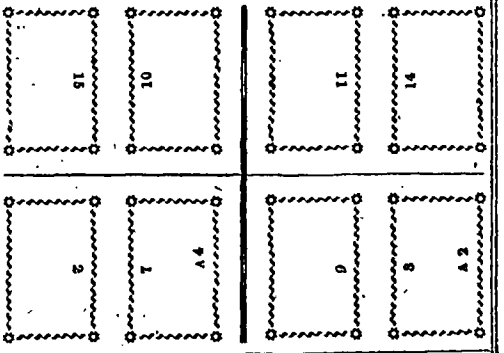
Outer Form of a Sheet of Octavo, the Broad Way.



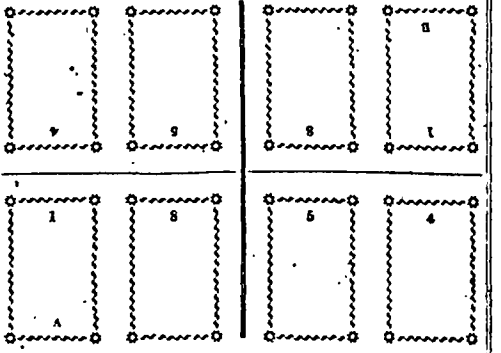
Inner Form of a Sheet of Common Octavo.



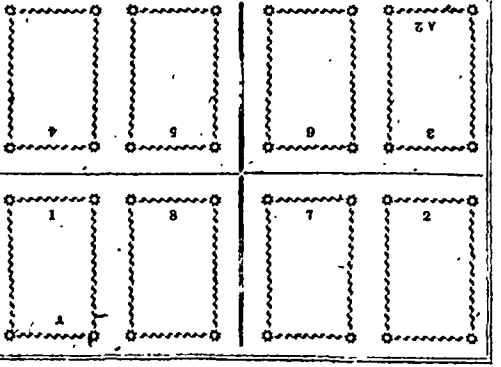
Inner Form of a Sheet of Octavo, the Broad Way.



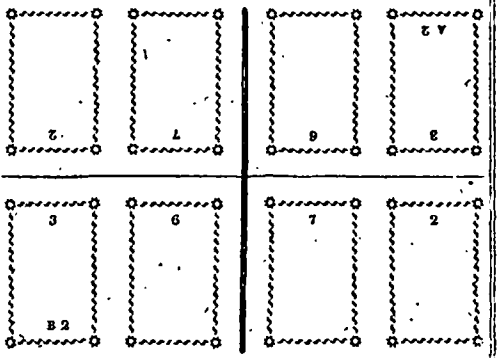
Two Half Sheets of Common Octavo worked together.



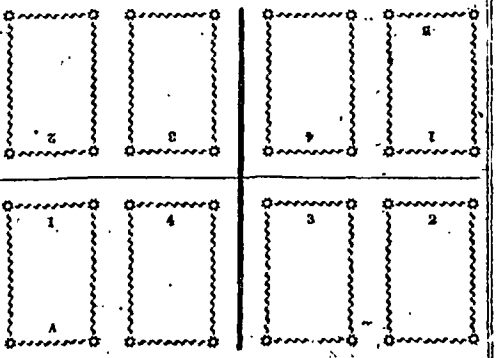
Half a Sheet of Common Octavo.



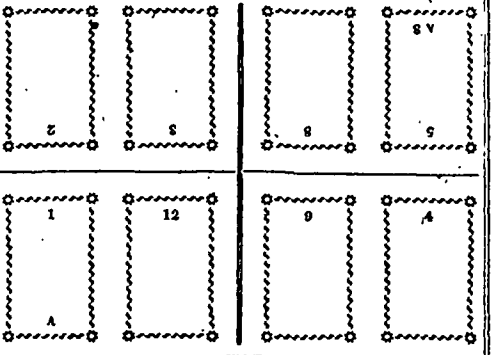
Inner Form of Two Half Sheets in Octavo.



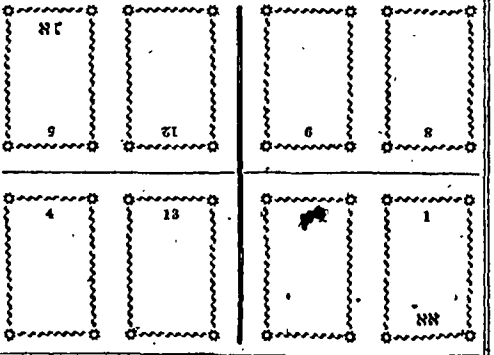
Two Quarters of a Sheet of Octavo, worked together.



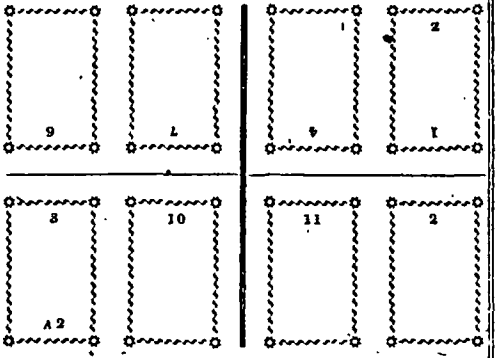
Sheet of Octavo, 12 of the Work, and 4 other Matter.



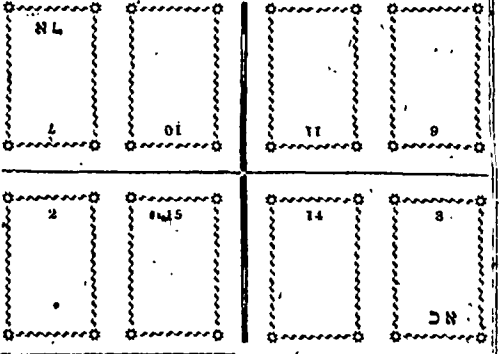
Outer Form of a Sheet of Octavo, of Hebrew Work.

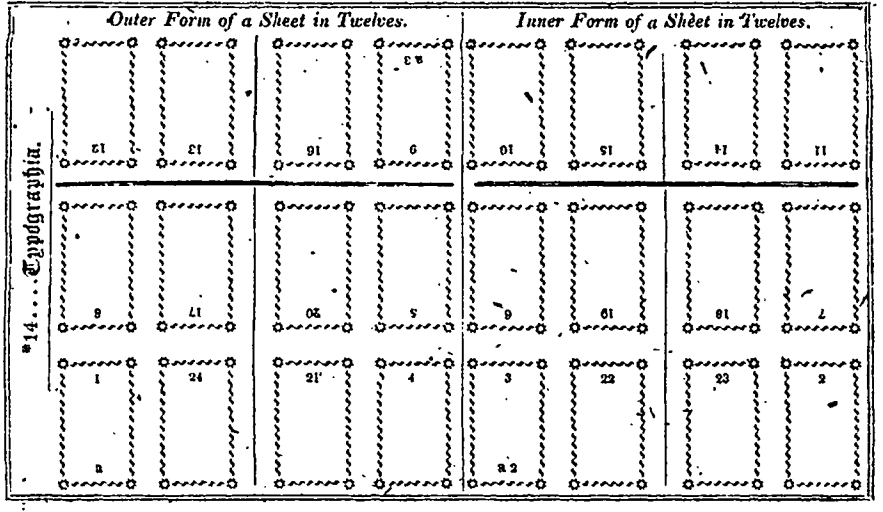


Inner Form of Octavo, 12 of Work, & 4 other Matter.

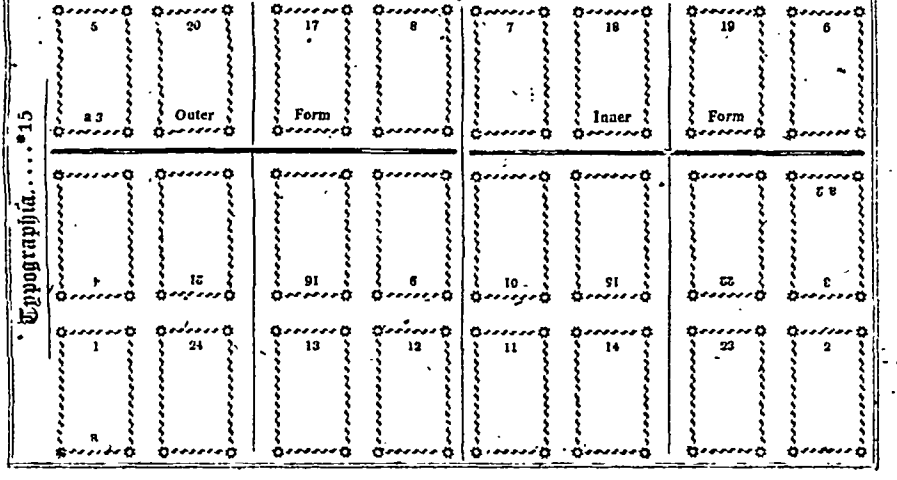


Inner Form of a Sheet of Octavo, of Hebrew Work.



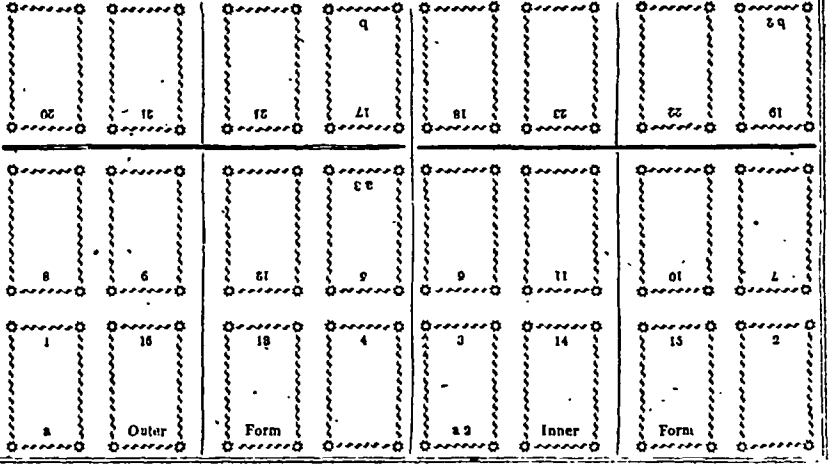

Outer Form of a Sheet in Twelves.
Inner Form of a Sheet in Twelves.
a 3
a 2
a
12
13
16
9
10
15
14
11
8
17
20
5
9
16
18
7
1
24
21
4
3
22
23
2

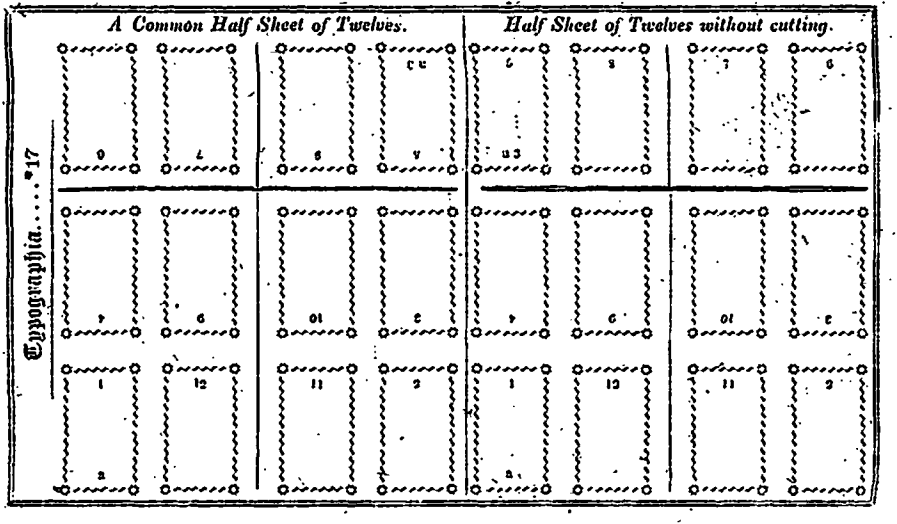
A Sheet of Twelves without cutting.



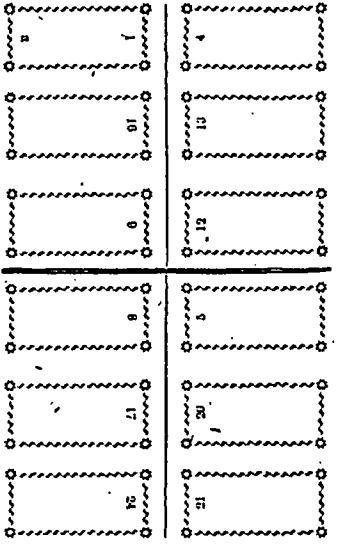
*16....Typographia.

A Sheet in Twelves, with Two Signatures.



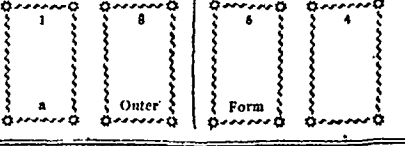

A Common Half Sheet of Twelves.
Half Sheet of Twelves without cutting.
Typography.... 17

Outer Form of a Sheet of Long Twelves.

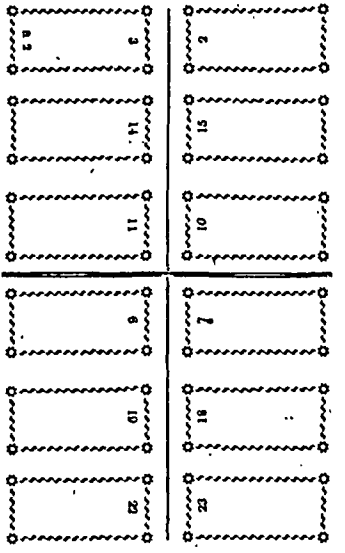


One-third, or 8 pages of a Sheet of Twelves.

To be imposed as a Slip, or in the Off-cross.

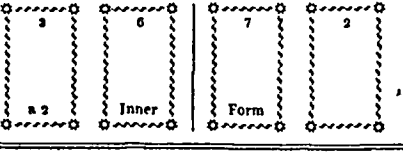


Inner Form of a Sheet of Long Twelves.

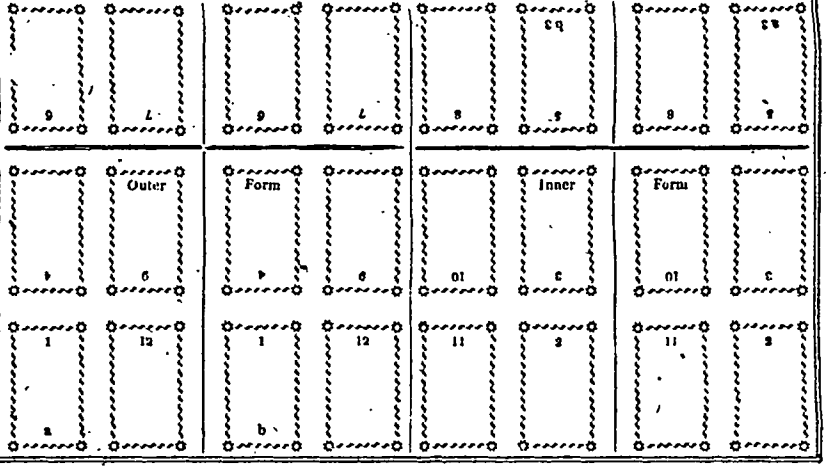


One-third, or 8 pages of a Sheet of Twelves.

To be imposed as a Slip, or in the Off-cross.



Two Half Sheets of Twelves worked together.

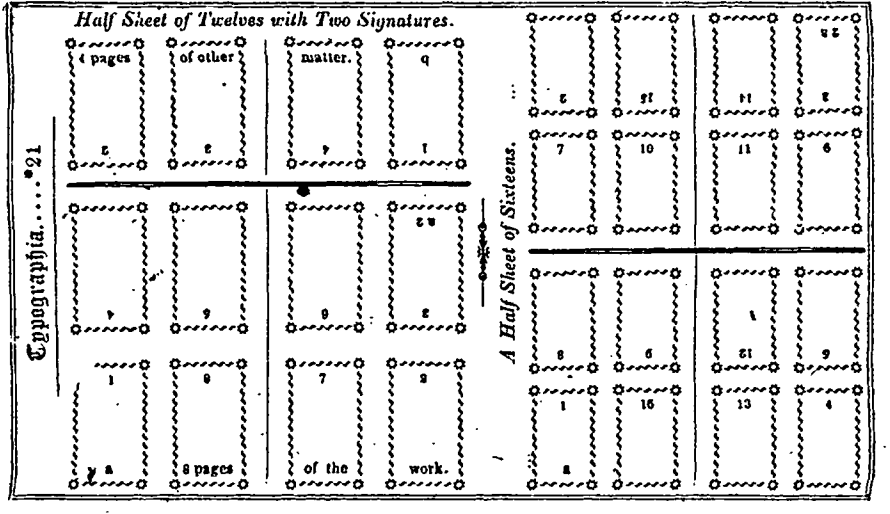


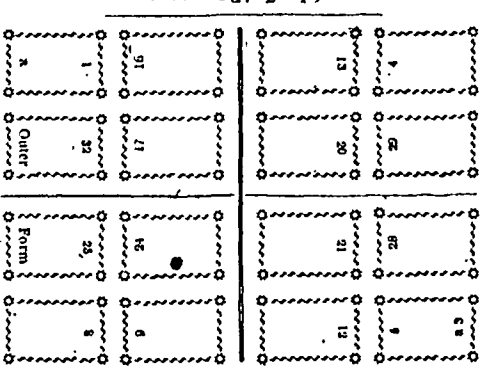
Half Sheet of Twelves with Two Signatures.

4 pages	5	2	1
of other	8	3	4
matter.	4	6	7
1	9	2	3
8 pages	8	9	1
of the	7	6	2
work.	2	3	4

A Half Sheet of Sixteens.

1	8	7	2
16	9	10	15
13	12	11	14
4	5	6	3

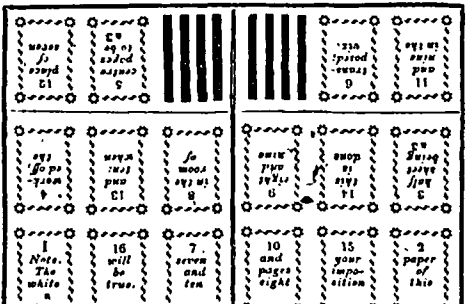




† A Sheet of Sixteens, with Two S gnatures, is imposed as two sheets of common octavo, putting the first signature for the one half sheet where A stands (folio 1), and the first page of the other half sheet in the place of A 3 (folio 5.)

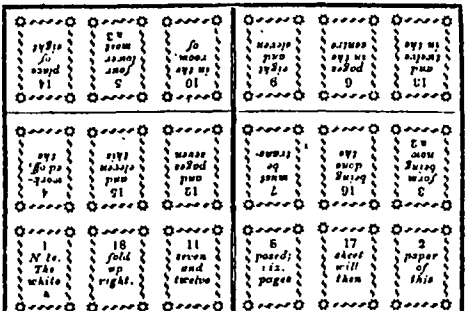
A Half Sheet of Eighteens.

Containing 18 pages.



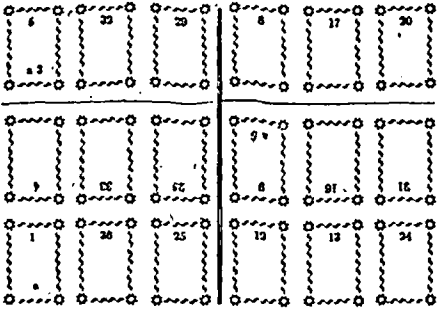
A Half Sheet of Eighteens.

Complete.


1 N le. The white
18 fold up right.
11 seven and twelve
6 passed; 112. pages
17 sheet will then
2 paper of this
14 place of sheet
5 four wheels
10 in the room of
9 sheet and eleven
6 pages in the centre
13 and centre in the
4 work-ed off the
12 and eleven pages
7 sheet be exam-
16 and eleven pages
3 form being now

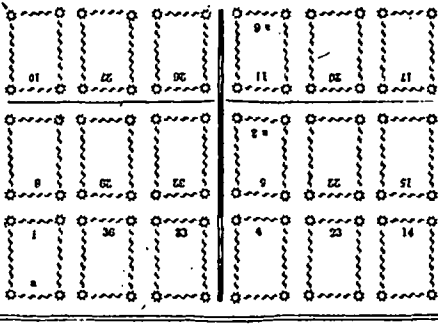
A Sheet of Eighteens, to be folded up together.

Outer Form.



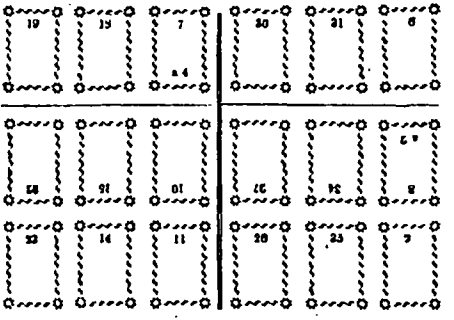
A Sheet of Eighteens, with One Signature.

Outer Form.



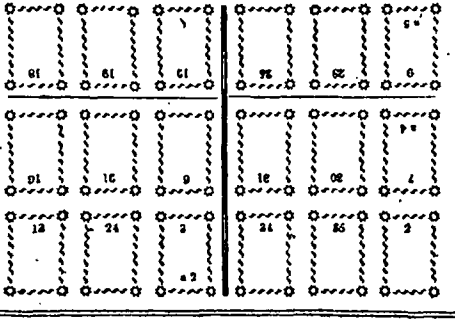
A Sheet of Eighteens, to be folded up together.

Inner Form.



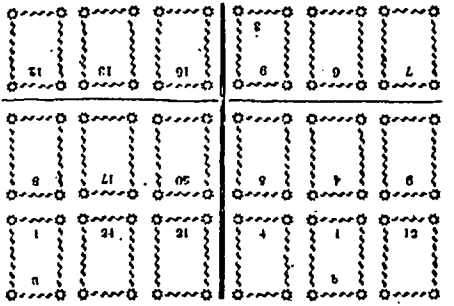
A Sheet of Eighteens, with One Signature.

Inner Form.



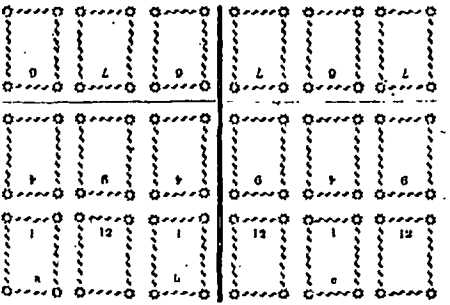
A Sheet of Eighteens, with Two Signatures.

Outer Form.



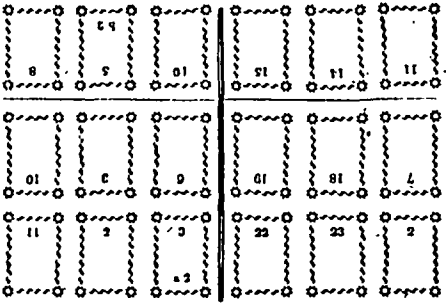
A Sheet of Eighteens, with Three Signatures.

Outer Form.



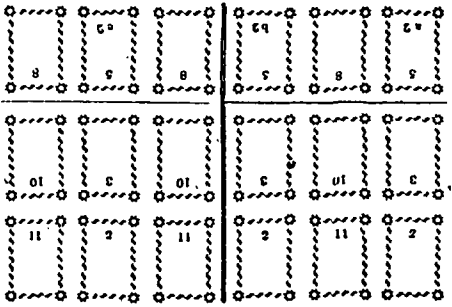
A Sheet of Eighteens, with Two Signatures.

Inner Form.



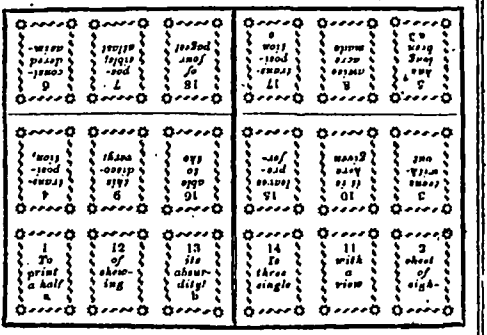
A Sheet of Eighteens, with Three Signatures.

Inner Form.

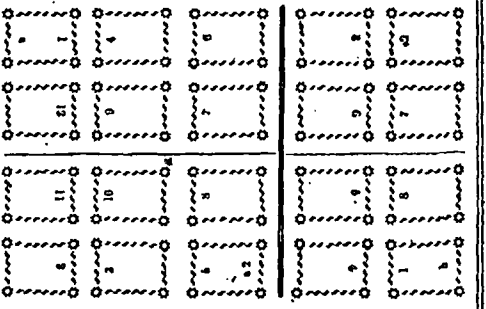


A Half Sheet of Eighteens.

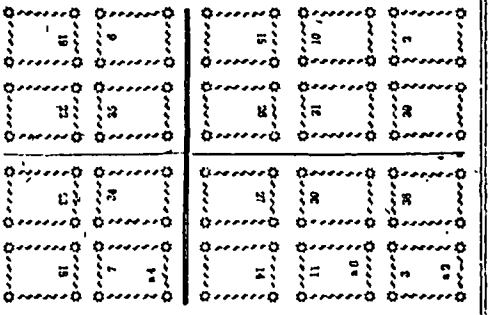
Without transposition.



A Half Sheet of Twenties, with Two Signatures.

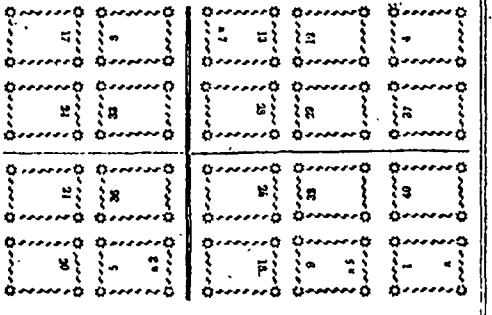


Inner Form.

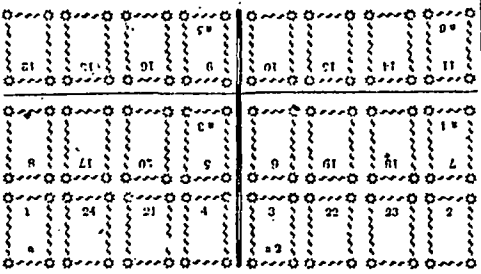


A Sheet of Twenties.

Outer Form.

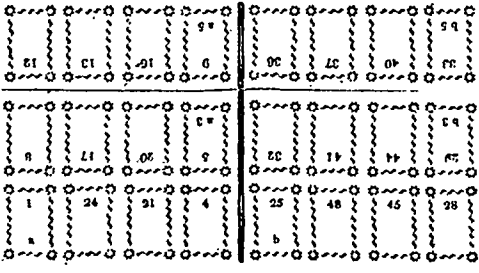


A Half Sheet of Twenty-fours.

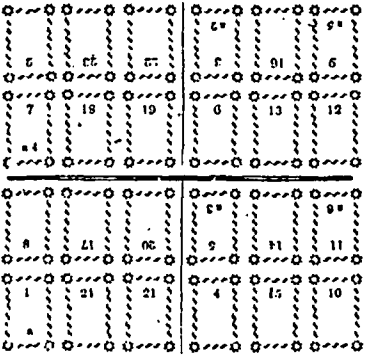


A Sheet of Twenty-fours, with Two Signatures.

Outer Form.

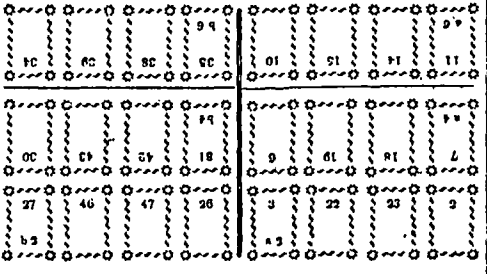


A Half Sheet of Twenty-fours, the Sixteen-way.

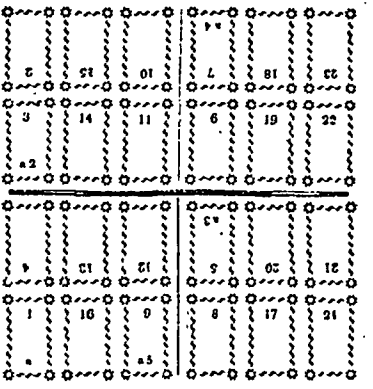


A Sheet of Twenty-fours, with Two Signatures.

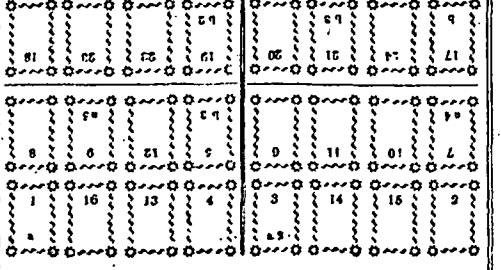
Inner Form.



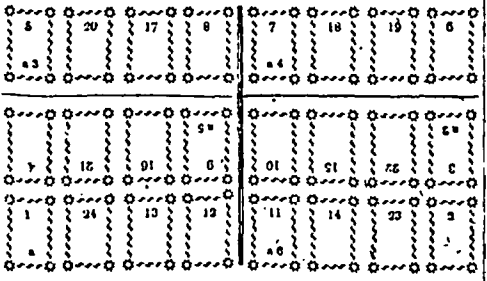
A Half Sheet of Long Twenty-fours.



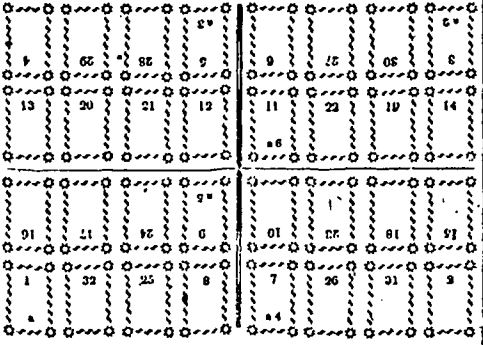
A Half Sheet of Twenty-fours, with Two Signatures.



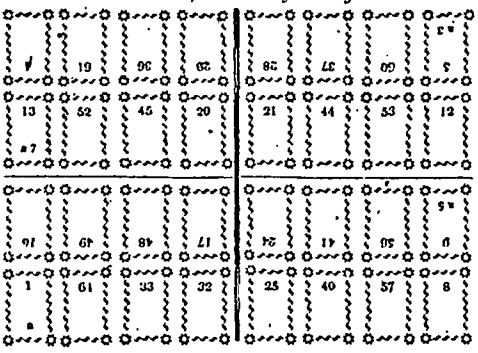
A Half Sheet of Twenty-fours, without Cutting.



A Half Sheet of Thirty-twos.

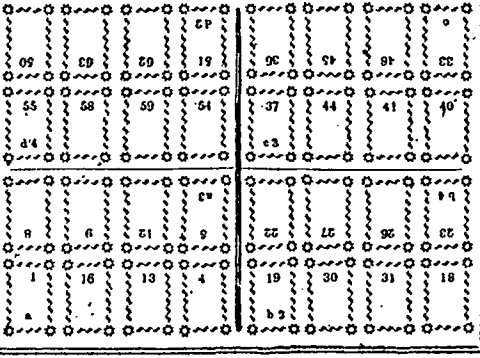


Outer Form of a Sheet of Thirty-twos.

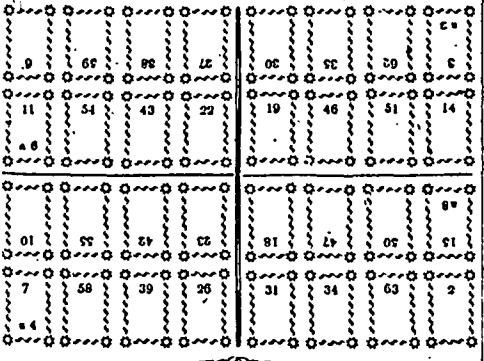


A Sheet of Thirty-twos, with Four Signatures.

Outer Form.

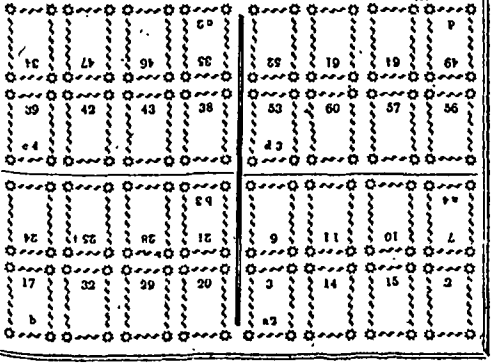


Inner Form of a Sheet of Thirty-twos.

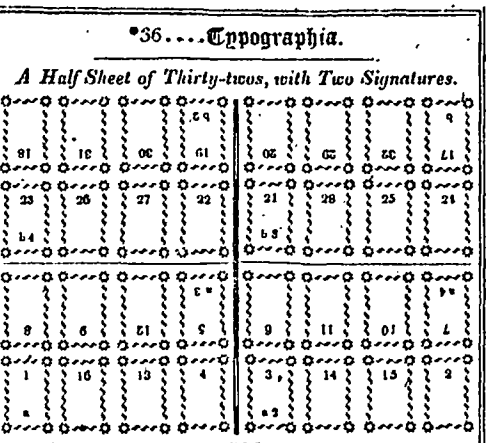


A Sheet of Thirty-twos, with Four Signatures.

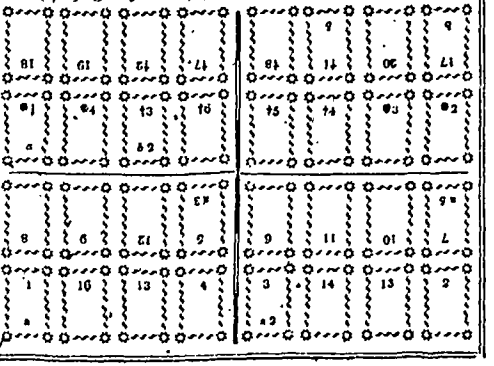
Inner Form.



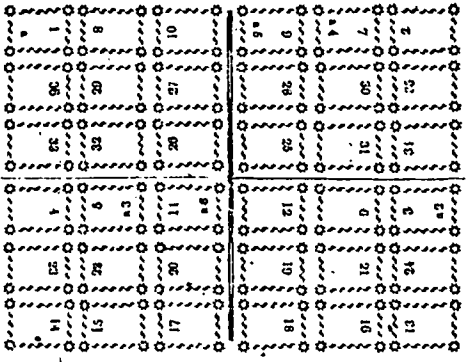
A Half Sheet of Thirty-twos, with Two Signatures.



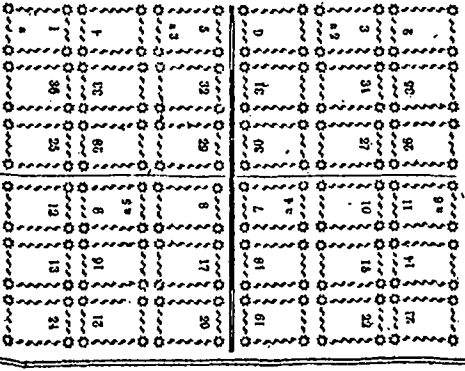
A Half Sheet of Thirty-twos, 20 pages of the Work, 4 pages of Title, &c. and 8 of other matter.



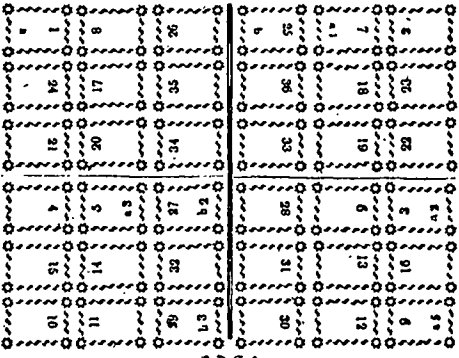
A Half Sheet of Thirty-sixes.



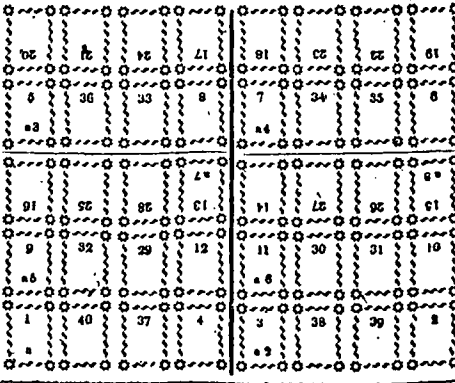
A Half Sheet of Thirty-sixes, without Cutting.



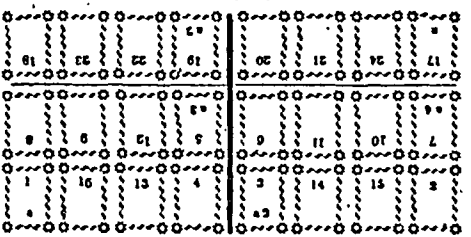
A Half Sheet of Thirty-sixes, with Two Signatures.



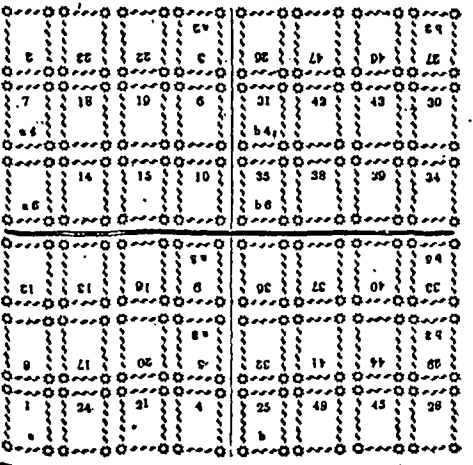
A Half Sheet of Forties.



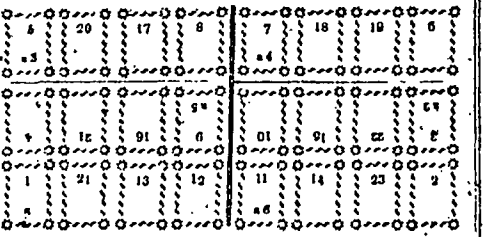
A Quarter Sheet of Forty-eights, with Two Sigs.



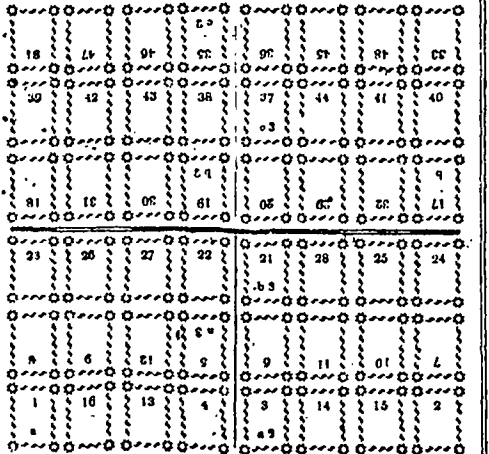
A Half Sheet of Forty-eights, with Two Signatures.



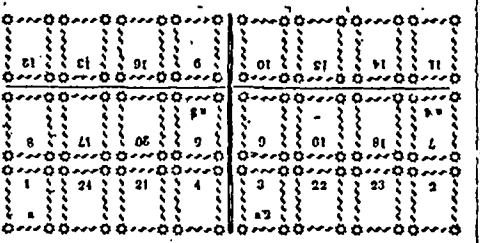
A Quarter Sheet of Forty-eights, without Cutting.



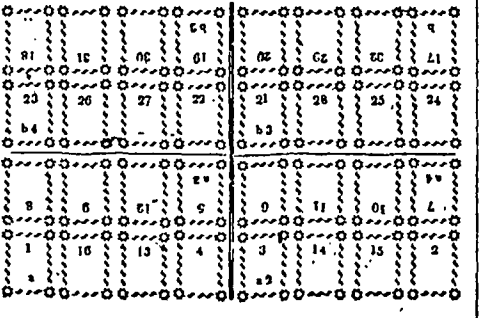
A Half Sheet of Forty-eights, with Three Signatures.



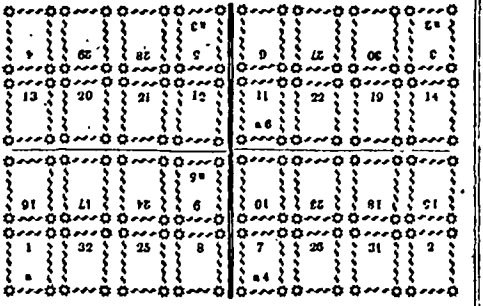
A Common Quarter Sheet of Forty-eights.



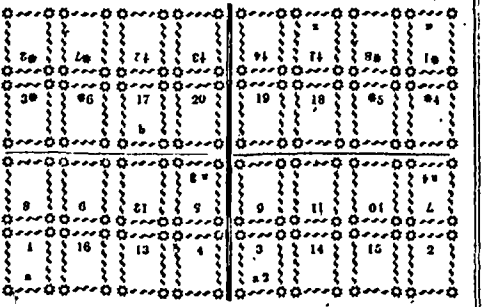
A Quarter Sheet of Sixty-fours, with Two Signatures.



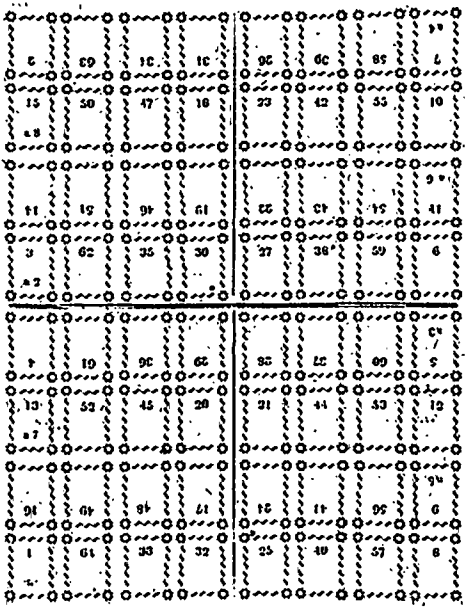
A Common Quarter Sheet of Sixty-fours.



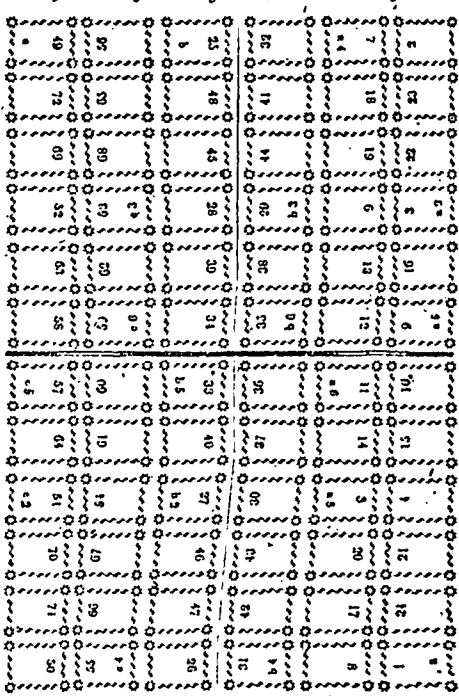
A Quarter Sheet of Sixty-fours, 20 pages of the Work, 8 of Title, and 4 of other matter.



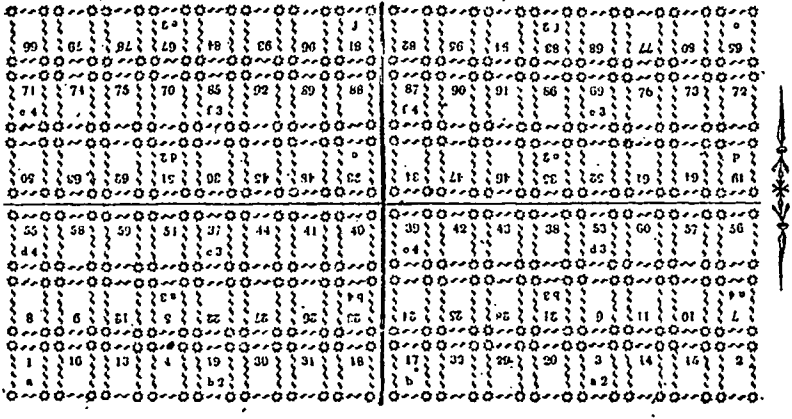
A Half Sheet of Sixty-fours.



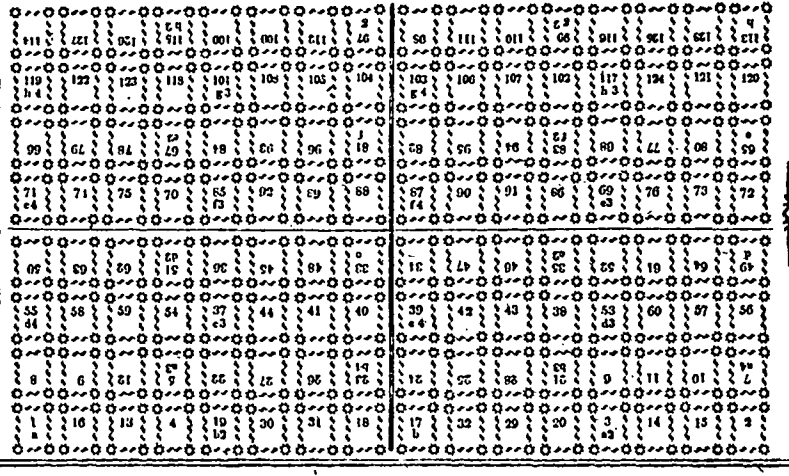
A Half Sheet of Seventy-twos, with Three Signatures.



A Half Sheet of Ninety-sixes, with Six Signatures.



A Half Sheet of One Hundred and Twenty-eights, with Eight Signatures.



Schemes of various other irregular sizes might have been introduced, but they could answer no other purpose than that of pleasing the fancy, by exhibiting the possibility of folding a sheet of paper into so many different forms.

In attempting to elucidate this subject, we shall not merely confine ourselves to a brief outline of it, but we shall also give a few examples of some of the sizes, which, we trust, will be fully explanatory to the junior portion of our readers:—therefore, we shall begin with a half sheet of octavo: for instance, let us suppose that we have got four pages of prefatory and four of concluding matter, they should be imposed as two quarters of a sheet, the long way—say eight of introductory and four of conclusion, these would form one half sheet and a quarter, as just noticed:—in twelves, half sheet, they should stand four and eight, or three fours (three off-cuts)—if a sheet, say twenty and four, we place sixteen in the long crosses (as a sheet of octavo), and the remaining eight as two fours in the short crosses; viz. the first four would occupy the usual stations of pages 9, 10, 15, 16, and the other four would take the places assigned to 11, 12, 13, 14—if three eights, then as three off-cuts: in sixteens, half sheet, say twelve and four, they will stand thus, one half sheet of twelves without cutting, the other four in the situations of 8, 2, 15, 14; if two eights, as two half sheets of octavo—a sheet, imagine twenty and twelve; the first sixteen should be laid down as two half sheets of octavo (opened), that is, the ninth page in the place of the third in the scheme; the other four will occupy the places of pages 25, 26, 7, 8; and the other twelve as a half sheet of twelves, without cutting, placing the first page in the situation of 27 in the scheme:—a half sheet of eighteens, say eight and

ten, that is, eight would form a half sheet of octavo, the other two as 9 and 10; the remaining eight should run thus, the first four supplying the stations of 11, 12, 7, 8, and the other four the places of 13, 14, 5, and 6:—a sheet of eighteens, we will divide into sixteen, twelve, and eight; viz. the first should fill the situations of 1, 2, 3, 4, 5, 6, 7, 8, 29, 30, 31, 32, 33, 34, 35, 36, as a sheet of octavo; the second in the places of 23, 24, 21, 22, 19, 20, 17, 18, 15, 16, 13, 14, a common half sheet of twelves; the remaining eight instead of pages 9, 10, 11, 12, 25, 26, 27, 28, as two quarters of a sheet of octavo, perfected: thus far, we are of opinion, the explanation will be sufficient, because the rule for the twelves may be applied to the twenty-fours, and those of the octavo and sixteens to the thirty-twos, &c. In addition, we beg to observe, in order to meet the exigencies of every possible case, that all odd matter, for whatever sized form, should be divided into fours, eights, twelves, and sixteens, which is the ground-work of all the impositions, (except the eighteens, which differ from all the others); for instance, sixteens, twenty-fours, and thirty-twos, are only octavos and twelves doubled, or twice doubled, and imposed in half sheets: for example, the sixteens are two octavos imposed on one side the short cross; the twenty-fours are two twelves imposed on each side the long cross, and a thirty-twos is four octavos imposed in each quarter of the chase. Thus a sheet may be repeatedly doubled. By this division, any form or sheet may be imposed, always bearing in mind, that the first page of each class must stand to the left hand, when the foot of the page is towards you, and to the right when the head of the page is the nearest to you. Having set down the first page, then trace the remainder accord-

ing to the scheme which applies to its number; in proof of which, the standard rule for all other impositions may be adopted; namely, each two pages that come together, will make one more than the number of pages in the class, or sheet. The first page of any portion can be placed in the situation of any odd page, where they make even numbers. These examples, we trust, will prove satisfactory.

It is necessary, before we proceed any further on the subject of imposing, to make a few observations on the method of tying up a page, which is done with a piece of fine packthread, turned four or five times round it, and fastened at the right hand corner, by thrusting a noose of it between the several turnings and the matter, with a piece of brass rule, and drawing it perfectly tight: taking care, during the whole time, to keep the fore-finger of the left hand tight on the corner, to prevent the page from being drawn aside when the cord is strained.

The page being tied up, the compositor removes it pretty far from the ledges of the galley, to see if the turns of cord lie about the middle of the shank of the letter; if they lie too high, as most commonly they do, he thrusts them lower, and, if the page be not too broad, he places his fore or middle finger, or both, of his right hand, on the right side of the page, and his thumb on the left; then, bending his other fingers under the head of the page, he next places the fingers of his left hand in the same position at the foot of the page, and raising it upright, lodges it upon the inside of his fingers, under the head of the page; he then takes a page paper into the palm of his hand, and puts it against the bottom of the page, and turning his left hand outward, receives the page flat upon the paper on the palm

of his hand; then, with his right hand he grasps the sides of the page and the paper, which turns up against the sides of the page, and sets it in a convenient spot under his frame, placing it on the left hand, with the foot towards him, that the other pages that are in like manner set down afterwards, may stand by it in an orderly succession until he comes to impose them.

If it be a large folio page, or a broadside, he has tied up, he cannot take that into his hands, because it is too broad for his grasp; therefore he carries his galley and page to the imposing stone, and turns the handle of the galley towards him, and taking hold of the handle with his right hand, he places the ball of the thumb of his left hand against the inside of the head ledge of the galley, to hold it and keep it steady, and by the handle draws the slice with the page upon it, out of the galley, letting the slice rest upon the imposing stone; he then thrusts the head end of the slice so far upon it, that the foot of the page may stand an inch or two within the outer edge of the stone, and placing his left hand against the foot of the page, in the same posture he last placed it against the head ledge of the galley, he then draws the slice from under the bottom of the page. We shall now return to our subject:—

In half sheets, all the pages belonging to the white paper, and reiteration, are imposed in one chase. So that when a sheet of paper is printed on both sides with the same form, that sheet is cut in two in the short cross, if quarto or octavo, and in the short and long cross, if twelves, and folded as octavo, or twelves.

When a compositor proceeds to impose, he carefully takes the pages (which he had previously placed on pieces of paper, in regular succes-

sion), from under his frame: in doing this, the paper should be tightly grasped on both sides the page, in order that it may be kept firm to the bottom of the page, whereas if it should be left slack, the letters will be liable to slip out, unless it be particularly well tied up; having conveyed it to the stone, he next places the two last fingers of his right hand under the head of the page, but not under the page paper at the head of it, still grasping the sides with his fore fingers and thumb; he then slips his left hand so that the palm of it may turn towards the bottom; and lifting the page upright on his right hand, he disengages the left to remove the paper; he next grasps the foot end of the page with his left hand, in the same manner as the right holds the head of it, and turning the face of the letter towards him, lays it nimbly down, so that the whole page may come in contact with the face of the stone at one time, thereby preventing any letters from slipping out, which would endanger the breaking, squabbling, or hanging of the page.

As the foregoing method (particularly in inexperienced or careless hands) would frequently endanger a page, because, should it be large, double, or treble columns, or have side notes, it would be much safer to pursue the following plan, which is now generally adopted by most compositors; namely, to provide good strong (not coarse and rough) page papers, and when the pages are brought to the stone, instead of lifting them up as just noticed, they are slided off the papers in the same manner as before directed respecting a folio page, on the slice galley.

In laying down our pages, we place them in the same order as they present themselves at the press, for turning the paper, either for octavo or twelves. And though compositors do not lay down the pages

of some sizes in the same manner, they nevertheless make them have their right succession without embarrassing the pressman.

The pages for a form being put down, we follow them, and see whether the direction answers to the first word of the next following page. But we do not trust to this in works that abound with titles and heads, where pages often have the same word for their beginning. In this case we justify the number of such pages into the direction lines, rather than run the hazard of transposing them; since it is more easy to put an n-quadrat into the room of a figure, than to rectify a mistake of that kind after the pages are untied. But in close and ordinary matter we take notice, first, whether the uneven outer pages have their proper signatures; then, whether the outside page, and the number of the page next to it, amount to one more than there are pages contained in a sheet or half sheet of our work. Thus, for example, in folio, one and four make five; in quarto, one and eight make nine; in octavo, one and sixteen make seventeen. In this manner we may examine every two pages in all other sizes, whether their joint number exceeds the number of pages in a sheet by one; which, if it does, is a proof that the pages are in their right places.

Being sure that our pages are laid down right, we proceed to dressing of chases, which we will suppose to be for a sheet of octavo. Accordingly we endeavour to come at a good pair of chases, that are fellows, as well in circumference as in other respects; and having laid them over the pages for the two different forms, we consider the largeness of the paper on which the work is to be done, and put such gutter-stick betwixt page and page, and such reglets along the sides of the two crosses, as

will give the book proper margins after it is bound. Having dressed the inside of our pages, we then place side and foot sticks to their outsides; being thus secured by the furniture, we next untie them, quarter after quarter, the inner page first and then the outer, at the same time forcing the letter towards the crosses, and using every precaution to prevent the pages from hanging or leaning; and in order to guard against accidents, when the quarter is untied, we secure it with a couple of quoins.

By observing a proper method in cutting up new furniture, the same will be serviceable for other works, as well as the one for which it is intended, even though the size of the page may differ, provided it agrees with the margin of the paper. The gutters should be cut two or three lines longer than the page; the head-bolts wider; the back furniture may run down to the rim of the chase, but must be level with the top of the page, which will admit of the inner head-bolt running in; the difference of the outer head-bolt may go over the side-stick, and the gutter will then run up between them. The side stick only need to be cut exact, and the furniture will completely justify.

The pages of a sheet or half sheet being now dressed, our next business is to make the margin, or to try whether our furniture is so proportioned as that each page may occupy one side of a leaf, so as to have an equal margin of white paper left at the sides as well as at the head and foot thereof.

The method of making margin by rule, is practised by no other printing nation besides the English; and it would be in vain to persuade printers and booksellers in foreign parts to come into our measures, as to making margin; since they would disoblige the literati were they to deprive them of

a large margin, on which to make their remaks; and as to narrow gutter-sticks in school-books and other circulating works, they are so contrived for the joint interest of the printer and proprietor.

To make proper margin, some use the following method for octavos; viz. they measure and mark the width of four pages by compasses, on a sheet of paper designed for the work, beginning to measure at one extremity of the breadth of the sheet. The rest of the paper they divide into four equal parts, allowing two-fourths for the width of two separate gutter-sticks; the remaining two-fourths they divide again into four equal parts, and allow one-fourth for the margin along each side of the short cross, and one-fourth for the margin to each outside page. But because the thickness of the short cross adds considerably to the margin, they reduce the furniture in the back accordingly, and thereby enlarge the outside margin, which requires the greatest share, to allow for the unevenness of the paper itself, as well as for pressmen laying sheets uneven, when the fault is not in the paper. Having thus made the margin between the pages to the breadth of the paper, they proportion the margin at the head, in the same manner, to the length, and accordingly measure and mark the length of two pages, dividing the rest into four parts, whereof is allowed one-fourth on each side of the long cross, and one-fourth for the margin that runs along the foot of the two ranges of pages. But though each part is counted equal to another, they do not prove so upon examination; for as in the short cross, so they lessen the furniture on both sides the long one, to enlarge the bottom margin, for the same reasons that were assigned for extending the side margin.

This being the method that is used by some in

making margin to octavos, they go the same way to work in twelves, where their chief care is to fix upon a proper size for the head sticks, or bolts; and, according to them, allow in the following manner; viz. for the outer margin along the foot of the pages, the amount of two-thirds of the breadth of the head sticks, and the same for the inner margin, that reaches from the foot of the fifth page to the centre of the groove for the points; and from the centre of that groove to the pages of the quire, or that cut off, they allow half the breadth of the head stick. As to the margin along the long cross, it is governed by the gutter sticks; and it is common to put as much on each side of the long cross as amounts to half the breadth of the gutter stick, without deducting almost any thing for the long cross, since that makes allowance to answer the outer margin—exposed to the mercy of both the pressman and bookbinder.

Thus much may suffice about making margin the above way; which, though it is different from what others use, is nevertheless the basis for making proper margin. Some compositors make margin in the following manner. Having dressed their chases with suitable furniture, for octavo, they fold a sheet of the right paper to that size; then, opening it to the size of a leaf in quarto, they lay one extremity of it against the folio side of the fifteenth page, if it be an inner form, or against the folio side of the thirteenth page, if it be an outer form, to observe whether the opposite extremity of the paper, folded in quarto, reaches to and fairly covers the third, or the first page, according to the form under hand; which, if it does, proves the margin of that quarter to be right, and that the others may be adjusted to that. Having in this manner made the margin to the breadth of the paper, they proportion it to the

length, by trying whether the depth of the paper, folded in quarto, reaches to and fairly covers the bottom of the line of the fifteenth or of the thirteenth page, when the upper end of the paper, folded in quarto, is laid against the back of the running title of the tenth or of the twelfth page; which, if it does, proves that the margin to the length of the page is right. In making margin, we should always take care that the gutter-sticks be of a proper breadth, which may be tried by holding one end of the paper, folded in quarto, to the centre of the groove in the short cross, to observe whether the fold for octavo falls in the middle of a gutter-stick; if it should, it will prove the gutter to be correct. In this manner we may also try the margin of twelves and other sizes; for having carefully folded a sheet of the paper intended for the work, one quarter may be first dressed, and the margin adjusted before we proceed further; for if the foldings fall in the centre of the respective parts of the furniture, it proves that the margin is right throughout.

As the lessening or widening of gutter sticks is sometimes unavoidable, and withal troublesome to compositors, it would be advisable to have them composed of two or more pieces, as they could readily be extended or reduced, according to circumstances, by means of reglets, so as to answer for different sizes of paper, which would not only be found advantageous to the compositor, but it would also greatly tend to assist the pressman in making his form to register.

The chases being now dressed, and the proper margin made, nothing remains but quoining and locking up the forms. But before this is done, we cut slips of scale-boards, and put one; or sometimes more, along both sides of the long as well

as of the short cross; not on account of enlarging the margin, but to supply the inequality of one cross to another, and to assist the pressman in making register; for though we find some so very nice, as to fancy here a thin scaleboard too much, and there one too little, it amounts to no more than mere imagination, and, perhaps, a shew of authority; considering, that the very parts of the paper whose margin is adjusted by scaleboards, are subject to the bookbinder's plough, and that it is dubious whether he will have the same regard to margin with the printer; for we are induced to think, that the abolishing of large outside margin is owing to some penurious book-binders, who gave themselves more concern about white paper shavings, than the handsome appearance of a book; hence, to prevent books from being spoiled in this manner, it is usual in Germany to make the title-page considerably wider and longer than those of the work, which sometimes has a good effect.

All that has been said concerning making margin, relates properly to imposing the first sheet of a work; for after that is true dressed, a second, or more sheets, may be dressed with less trouble; for then we impose from wrought-off forms, where we have nothing else to do but to put the chase and furniture about the pages, in the same manner as we take it off the form we are stripping; after which we put the running titles over the pages, and untie them, to make room for the quoins, which we put to each quarter in the same order as we take them off the form we impose from.

In order to be accurate in altering the folios of the respective pages, according to their regular succession, we have arranged the following tables of signatures and folios:—

TABLE,

Exhibiting the First Folio of a Sheet of

FOLIO,

Throughout Twelve Alphabets.

Sig.	1	2	3	4	5	6	7	8	9	10	11	12
A	0	89	181	273	365	457	549	641	733	825	917	1009
B	1	93	185	277	369	461	553	645	737	829	921	1013
C	5	97	189	281	373	465	557	649	741	833	925	1017
D	9	101	193	285	377	469	561	653	745	837	929	1021
E	13	105	197	289	381	473	565	657	749	841	933	1025
F	17	109	201	293	385	477	569	661	753	845	937	1029
G	21	113	205	297	389	481	573	665	757	849	941	1033
H	25	117	209	301	393	485	577	669	761	853	945	1037
I	29	121	213	305	397	489	581	673	765	857	949	1041
K	33	125	217	309	401	493	585	677	769	861	953	1045
L	37	129	221	313	405	497	589	681	773	865	957	1049
M	41	133	225	317	409	501	593	685	777	869	961	1053
N	45	137	229	321	413	505	597	689	781	873	965	1057
O	49	141	233	325	417	509	601	693	785	877	969	1061
P	53	145	237	329	421	513	605	697	789	881	973	1065
Q	57	149	241	333	425	517	609	701	793	885	977	1069
R	61	153	245	337	429	521	613	705	797	889	981	1073
S	65	157	249	341	433	525	617	709	801	893	985	1077
T	69	161	253	345	437	529	621	713	805	897	989	1081
U	73	165	257	349	441	533	625	717	809	901	993	1085
X	77	169	261	353	445	537	629	721	813	905	997	1089
Y	81	173	265	357	449	541	633	725	817	909	1001	1093
Z	85	177	269	361	453	545	637	729	821	913	1005	1097

TABLE,

Exhibiting the First Folio of a Sheet of

QUARTO,

Throughout Ten Alphabets.

Sig	1	2	3	4	5	6	7	8	9	10
A	0	177	361	545	729	913	1197	1281	1465	1649
B	1	185	369	555	737	921	1105	1289	1473	1657
C	9	193	377	561	745	929	1113	1297	1481	1665
D	17	201	385	569	753	937	1121	1305	1489	1673
E	25	209	393	577	761	945	1129	1313	1497	1681
F	33	217	401	585	769	953	1137	1321	1505	1689
G	41	225	409	593	777	961	1145	1329	1513	1697
H	49	233	417	601	785	969	1153	1337	1521	1705
I	57	241	425	609	793	977	1161	1345	1529	1713
K	65	249	433	617	801	985	1169	1353	1537	1721
L	73	257	441	625	809	993	1177	1361	1545	1729
M	81	265	449	633	817	1001	1185	1369	1553	1737
N	89	273	457	641	825	1009	1193	1377	1561	1745
O	97	281	465	649	833	1017	1201	1385	1569	1753
P	105	289	473	657	841	1025	1209	1393	1577	1761
Q	113	297	481	665	849	1033	1217	1401	1585	1769
R	121	305	489	673	857	1041	1225	1409	1593	1777
S	129	313	497	681	865	1049	1233	1417	1601	1785
T	137	321	505	689	873	1057	1241	1425	1609	1793
U	145	329	513	697	881	1065	1249	1433	1617	1801
X	153	337	521	705	889	1073	1257	1441	1625	1809
Y	161	345	529	713	897	1081	1265	1449	1633	1817
Z	169	353	537	721	905	1089	1273	1457	1641	1825

TABLE,

Exhibiting the Signatures and Folios of

OCTAVOS, TWELVES, SIXTEENS, EIGHTEENS, AND TWENTY-FOURS.

No. Sheets.	Signature.	Octavo, Sheets.	Octavo, Half-sheets.	Twelves, Sheets.	Twelves, Halfsheets.	Sixteens, Sheets.	Eighteens.		Twenty-fours, Sheets.		Twenty-fours, Half-sheets.
	A	0	0	0	0	0	A	0	A	0	0
1	B	1	1	1	1	1	B	1	B	1	1
2	C	17	9	25	13	33	E	37	D	49	25
3	D	33	17	49	25	65	H	73	F	97	49
4	E	49	25	73	37	97	L	109	H	145	73
5	F	65	33	97	49	129	O	145	K	193	97
6	G	81	41	121	61	161	R	181	M	241	121
7	H	97	49	145	72	193	U	217	O	289	145
8	I	113	57	169	85	225	Z	253	Q	337	169
9	K	129	65	193	98	257	2 O	289	S	385	193
10	L	145	73	217	109	289	F	325	U	433	217
11	M	161	81	241	121	321	I	361	Y	481	241
12	N	177	89	265	135	353	M	397	2 A	529	265
13	O	193	97	289	145	385	P	433	C	577	289
14	P	209	105	313	157	417	S	469	E	625	313
15	Q	225	113	337	169	449	X	505	G	673	337
16	R	241	121	361	181	481	3 A	541	I	721	361
17	S	257	129	385	193	513	D	577	L	769	385
18	T	273	137	409	205	545	G	613	N	817	409
19	U	289	145	433	217	577	K	649	P	865	433
20	X	305	153	457	229	609	N	685	R	913	457
21	Y	321	161	481	241	641	Q	721	T	961	481
22	Z	337	169	505	253	673	T	757	X	1009	505

TABLE,

Exhibiting the Signatures and Folios of OCTAVOS, TWELVES, THIRTY-TWOS, FORTY-EIGHTS, AND SIXTY-FOURS.

No. Sheets.	Signature.	Octavo, Sheets.	Octavo, Half sheets.	Twelves, Sheets.	Twelves, Half-sheets.	Thirty-two Sheets.		Thirty-two Half-sheets.	Forty-eights, Half-sheets.	Sixty-four, Half-sheets.
23	2A	353	177	529	265	A	0	0	0	0
24	B	369	185	553	277	B	1	1	1	1
25	C	385	193	577	289	D	65	33	49	65
26	D	401	201	601	301	F	129	65	97	129
27	E	417	209	625	313	H	193	97	145	193
28	F	433	217	649	325	K	257	129	193	257
29	G	449	225	673	337	M	321	161	241	321
30	H	465	233	697	349	O	385	193	289	385
31	I	481	241	721	361	Q	449	225	337	449
32	K	497	249	745	373	S	513	257	385	513
33	L	513	257	769	385	U	577	289	433	577
34	M	529	265	793	397	Y	641	321	481	641
35	N	545	273	817	409	2 A	705	353	529	705
36	O	561	281	841	421	C		385		
37	P	577	289	865	433	E		417		
38	Q	593	297	889	445	G		449		
39	R	609	305	913	457	I		481		
40	S	625	313	937	469	L		513		
41	T	641	321	961	481	N		545		
42	U	657	329	985	493	P		577		
43	X	673	337	1009	505	R		09		
44	Y	689	345	1033	517	T		641		
45	Z	705	353	1057	529	X		673		

The running titles, with the right folios to them, being put to the pages, we proceed to locking up our forms; first carefully examining whether the pages of each quarter are of an exact length, for even the difference of a lead will cause them to hang. We ascertain their exactness by placing the ball of each thumb against the centre of the foot-stick, raising it a little with the pressure, and if the ends of both pages rise equal with the stick, it is a proof they will not bind; we then fit quoins betwixt the side and foot-stick of each quarter and the chase, till the whole form may be raised. And though locking up a form may be thought a trifling function, it demands our attention, nevertheless, in several instances. When we have pushed the quoins as far as we can, with our fingers, we make use of the mallet and shooting-stick, and gently drive the quoins along the side-sticks first, and then those along the foot-sticks, taking care to use an equal force in our strokes, and to drive the quoins far enough up the shoulders of the side and foot-sticks, that the letter may neither belly out one way nor hang in the other; and as to the lower quoins, they ought to be driven to a station where they may do the office of keeping the letter straight and even. And here we may venture to disapprove of the custom of slanting quoins on both sides, and planing their edges and corners off, whereby all the bevelled-off parts are rendered ineffectual to do the office of a quoin or wedge; for the slanted side of a quoin running against the square side of the chase, must needs carry a cavity with it, and consequently be void of binding with equal force in every part; whereas, in our opinion, it would deserve the name of an improvement, were quoins slanted on one side only, and their gradation and variety of sizes pre-

ferred to superficial neatness, which answers no other end than that of making the bevelled-off parts of a quoin useless, and incapable of doing the same execution with a plain one, that binds and bears alike in all its parts. As to the edges that are planed off across the two ends of a quoin, the want of them causes the shooting-stick to fly off the quoin almost at every hard stroke of the mallet, because the quoin end of the shooting-stick is rounded off; for which reason we should choose to have that end made of a forked, or else of a square form, to be of greater service in unlocking a form.

It often occurs that the quoins, from having been locked up wet, stick so tight to the furniture as to render it troublesome to unlock them; in such cases the inconvenience is remedied by driving the quoin up instead of down, which immediately loosens it, and it unlocks with ease.

Our form, or forms, being now locked up, and become portable, we deliver them to the pressmen to pull a proof of them. But here we must notice a corruption that prevails with some pressmen, in turning the term of *first* proof into that of *foul* proof, and often pull the proofs accordingly; whereas even a slight knowledge of printing is sufficient to judge, that a proof sheet ought to be pulled as clean and as neat as any sheet in a heap that is worked off. Hence it is a rule with careful pressmen, not to give proofs a high colour, nor to use very wet paper for them, but instead of these easements to give them a long and slow pull, that the matter may appear full and plain; after which the forms are rubbed over with a wet lie-brush, then carefully taken off the press, and the proof and forms delivered to the compositor's further care.

CHAP. VIII.

CORRECTORS AND CORRECTING.

IT has ever been the pursuit of eminent printers to aim at accuracy, by their particular care that the effects of their profession should appear without faults and errors, not only with respect to wrong letters and false spelling, but chiefly in regard to their correcting and illustrating such words and passages as are not fully explained or expressed, or are obscurely written in the copy. The office of corrector is not be applied to one that has merely a tolerable judgment of his mother tongue, but who has some knowledge of such languages as are in frequent use, viz. Hebrew, Greek, Latin, French, Italian and German, and possesses a quick and discerning eye—these are the accomplishments by which a corrector may raise his own and his master's credit; for it is a maxim with booksellers to give the first edition of a work to be done by such printers whom they know to be either able correctors themselves, or that employ fit persons, though not of universal learning, and who know the fundamentals of every art and science that may fall under their examination. We say, examination; for in cases where a corrector is not acquainted with the subject before him, he, together with the person that reads to him, can do no more than literally compare and cross-examine the proof by the original, without altering either the spelling or punctuation; since it is an author's province to prevent mistakes in such case, either by delivering his copy very accurate, and fairly written, or by carefully perusing the proof sheet. But where a corrector understands the language and characters of a work, he often finds

occasion to alter and to mend things that he can maintain to be either wrong or ill digested. If, therefore, a corrector suspects copy to want revising, he is not to postpone it, but to make his emendations in the manuscript before it is wanted by the compositor, that he may not be hindered in the pursuit of his business, or prejudiced by alterations in the proof, especially if they are of no real signification; such as far-fetched spelling of words, changing and thrusting in points, capitals, or any thing else that has nothing but fancy and humour for its authority and foundation.

What is chiefly required of a corrector, besides espying literal faults, is to spell and point after the prevailing method and genius of each particular language: but these being two points that never will be reconciled, but always afford employment for pedantic critics, every corrector ought to fix upon a method to spell ambiguous words and compounds always the same way. And that the compositors may become acquainted with and accustomed to his way of spelling, the best expedient will be to draw out, by degrees, a catalogue of such ambiguous words and compounds.

As it is necessary that correctors should understand languages, so it is requisite that they should be acquainted with the nature of printing, else they will be apt to expose themselves in objecting against several things that are done according to method and practice in printing. It is for this reason that correctors, in most printing-offices, are chosen out of compositors that are thought capable of that office, and who know how not only to correct literal faults, but can also discern where improprieties in workmanship are used, which cannot be expected in gentlemen who have not a sufficient knowledge of

printing; and it would be very ungenerous in a compositor to swerve from the common rules in practice, because the corrector is not printer enough to find fault with it.

ABRIDGING LATIN WORDS.

It appears that in the primitive time of printing, most Latin words were abbreviated, in order to save both paper, composition, and press-work: and as no fixed standard was adhered to, the reader became so perplexed, that it was deemed expedient to print a volume in order to give an explanation of them. Still this had not the desired effect, because the scriveners were continually inventing new contractions; therefore, as reading became more general, they were by degrees abolished in the most circulating works, and much reduced in others, except such as issued from the faculty of the law; who, particularly in England, as Smith observes, "have all along supported the antiquity of abbreviations, till lately, when they, together with the law Latin, made their *Exit*, though not without the wise order of the Legislature."

The present mode of abridging words differs from the former; they omitted letters in the middle of words, whereas we shorten them at the end by a full point. Latin contractions being admissible in physical recipes, notes and citations, catalogues, &c. therefore we present the following explanation:

PROPER NAMES OF MEN AND WOMEN.

Adolph *us*	Apollod *orus*	Bart. ol. om *eus*	Calves *ius*
Alphons *us*	Apollon *ius*	Bails *ius*	Cardan *us*
Amad *eus*	Apul *eius*	Basn *age*	Casaub *onus*
Alsted *ius*	Aristob *ulus*	Bellarm *inus*	Cassiod *orus*
Ambros *ius*	Aristot *eles*	Bened *ictus*	Cels *us*
Ammian *us*	Arn. old *us*	Bern. ard *us*	Christ *ianus*
Anastas *ius*	Artemid *orus*	Beros *us*	Christoph *orus*
Anaxag *oras*	Athan. as *ius*	Bonav. ent *ura*	Chrys. ost *omus*
Ans. elm *us*	Athenag *oras*	Bonif *acius*	Cic *ero*
Antonin *us*	Augustin *us*	Buxt *orfius*	Clem *ens*
Ant. on *ius*	Balth. as *arus*	Caiet *anus*	Clav *erius*

Coccej *us*
Conc *ordia*
Conr *adus*
Const.ant *ia*.
Crisp *inus*
Cuthb *ertus*
Cypr *ianus*
Cyr. ill *us*
Dem. et *rius*
Democr *itus*
Diod *orus*, Sic *ulus*
Diog *enes*, Laert *ius*
Dion. ys *ius*
Dioscor *ides*
Domit *ianus*
Doroth *ea*
Dudl *eius*
Dunc *anus*
E con *ora*
E ear *arus*
Empedocl *es*
Epiph *anius*
Everh *ardus*
Eugen *ius*
Eupol *emus*
Eurip *ides*
Euseb *ius*
Eust. ath *ius*
Eutrop *ius*
Eutych *ius*
Ez.ech *iel*
Fabr. ic *ius*
Ferd.in *andus*
Flacc *eius*
Florent *inus*
Franc. isc *us*
Genebr *ardus*
Gerald *us*
Gerv.as *ius*
Gratian *us*
Greg. or *ius*
Grot *ius*
Halicarn *assus*
Heges. ipp *us*
Herb *ertes*
Hesiod *us*
Hier. on *imus*
Herod *ian*
Herodot *us*
Hevel *ius*
Hieron *ymus*
Hilar *ius*
Hippoc *rates*
Hom *erus*
Honor *ius*
Hor. at *ius*
Horn *ius*
Hub. ert *us*
Ign. at *ius*
Iren *aeus*
Jos. eph *us*
Isid *orus*
Jul *ius*
Julian *us*
Justin *us*
Justinian *us*
Juv *enal*
Lactant *ius*
Lanc. el *ottus*
Leol *inus*
Leon *ellus*
Lips *ius*, Just *us*
Liv *ius*
Lucan *us*
Lucian *us*
Lucret *ius*
Lyc. urg *us*
Lys. and *er*
Machiav *ellus*
Macrob *us*
Maimon *ides*
Marcell *us*
Matt *haeus*
Maur.it *ius*
Max. im. il *ianus*
Montf *aucon*
Nath *aniel*
Nic.ol *aus*
Nicod *emus*
Olear *ius*
Ones. iph *orus*
Onuph *rius*
Orig *enes*
Osm. und *us*
Ov. id *ius*
Paracels *us*
Pasor *ius*
Perciv *allus*
Pereg *rinus*
Paus *anias*
Philib *ertus*
Petav *ius*
Philib *ertes*
Phil *emon*
Philostr *atus*
Plut *archus*
Polyb *ius*
Polyhist *or*
Porphyr *ius*
Procop *ius*
Ptol *emy*
Pythag *oras*
Quintil *ian us*
Quint *inus*
Raph *ael*
Raym *undus*
Regiuald *us*
Renaud *us*
Reynold *us*
Rice *iolus*
Rud olph *us*
Salmas *ius*
Scal *iger*
Scap *ula*
Schindl *er*
Sebast *ianus*
Sen *eca*
Sigism *undus*
Socr *ates*
Sol.om *on*
Sophron *ius*
Sozin *us*
Spanh *eimius*
Steph *anus*
Sueton *ius*
Sulpit *ius*
Tac *itus*
Tertull *ianus*
Themistocl *es*
Theob *a*. *ius*
Theodol *itus*
Theod *orus*
Theodoret *us*
Theodos *ius*
Theoph *ilus*
Theophr *astes*
Theophyl *actus*
Thomas *ius*
Thucyd *ides*
Tim.oth *eus*
Tremell *ius*
Trithem *ius*
Tull *ius*
Valent *inus*
Valer *ius*, Max *imus*
Vales *ius*
Varen *ius*
Vejet *ius*
Vellej *us*, Paterc *ulus*
Vinc. ent *ius*
Virg *ilius*
Vitruv *ius*
Voss *ius*
Urb *anus*
Urs *inus*
Wa th *erus*
Xenoph *on*
Zach. ar *ius*

Abridging Proper Names of Countries, Towns, and Rivers, when in Latin.

Abbav *illa*, in France
Alb *a* Grmo *a*, Belgrade
Als *atia*
Amst. el. od *amum*
Antv *erpia*
Aug *usta* Vind. el. ic *orum* Augsburg
Bat *avia*, Holland
Berol *inum*
Bonon *ia*
Brunop *olis*, Brunswick
Brux *ellæ*, Brussels
Byzant *ium*, Constantinople
Cant. ab *ria*
Cantuar *ia*
Chers.on *esus*, a peninsule
Col *onia* Agrp *ina*, Coln
Constantinop *olis*, or Czarigrade
Cras *ovia*, in Poland
Dantisc *um*
Danub *ius*, a river.
Delphin *atus*
Florent *ia*
Francof *urtum*
Gandav *um*, Gent
Ged. an *um*, Dantzic
Hafn *ia*, Copenhagen
Hieros *olimum*, Jerusalem
Hols *atia*, Holstein
Ins *ulæ* Fortun *atæ*, Canary Islands
Lugd *unum* Bat. av *orum* Leyden
Lugd. un *um*, Lion
Lusit *ania*, Portugal
Lutet *ia* Parisiorum, Paris
Massil *ia*. Marseilles
Mœn *us*, a river
Mogunt *ia*, Mentz
Monach *ium*, Munich
Neviom. ag *um*, Nemegen
Patav *ium*, Padua
Patav *ia*, Passaw
Pont *us* Eux *inus*, the Black Sea
Regiom. ont *um*, Koningsberg
Rhen *us*, a river
Sin *us* Adriat *icus*, the Adriatic sea
Tigur *ium*, Zurich
Traject *um*, Maestricht
Transilv *ania*
Trident *inum*, Trent
Turcom *annia*, Turkey
Vratisl *avia*, Breslau
Verul. am *ium*, Verulam
Ultraj. ect *um*, Utrecht
Ulyss *ippo*, Lisbon

Independently of the foregoing, many other proper names of men, places, &c. and abundance of common Latin words may be abbreviated, and some intimated by single letters, in particular work that will admit of it. We shorten the following words thus:—

Archiep *iscopus*	Fig *ura* Sgg *figuris*	numism *ata*
a *nnus* o *urrens*	h *oc est* h *oc m odo*	Orient *alis*
argent *um* aur *um*	h *oc t empore*	op *us* posth *umum*
Brev *is* breviss *imus*	hod *ie* hodiern *um*	Parv *us, a, um*
Cæs *ar*	Imper *ator*	p *agina m ihi*
comment *arius*	impp *imperatores*	Quest *io* Reb *us*
cor *am* c *um*	JCtus *Juris-consultus*	respubl *ica*
Dissert *atio*	ib. id *em* it *em* i *d e st*	S. S *Sacrofanctus*
descript *io*. &c.	Kal. end *as*	secund *us, a, um*
d icto l *oco*	LL. D *legum Doctor*	s *cu* sc *ilicet*
Eid *em* eod *em*	lib *er* libb *libri*	Tab *ula* thesaur *us*
eor *um* eorund *em*	l. oc o ' c. *it ato*	Vet *us* veter *um*
ej. usd *em*	Magn *us. a, um*	v *erbi* gr *atia*
e xempli gr *atia*	miscell *anea* medic *ina*	Univers *itas*
epist *ola* epit *ome*	Nov *us, a, um*	universal *is*

By observing these lists, it will be seen that the contractions may be made at any of the separations, and that the Italic may be omitted generally. In proof of which we present the following rules:—

1. We do not abridge a word at the end of a syllable, but always annex one or more letters of the next syllable.

2. In inscriptions taken from monuments and medals, we neither abridge full words, nor lengthen words that are shortened, but abide by the original; which we also do in physical recipes and prescriptions, that the vulgar may be debarred from knowing the salutary effects of drugs, by giving them Latin names, abridged.

3. In shortening a word, we always carry the reading part so far that it cannot be taken for any other word. For example, *Just.* implies Justus; *Justin.* for Justinus; and *Justinian.* instead of Justinianus. *Const.* implies Constans; *Constant.* for Constantia; *Constantin.* for Constantinus; and *Constantinop.* for Constantinopolis. Names of places in catalogues, are not always shortened alike; sometimes we put *Ff.* for Francfort, *Ls.* for Liepsic, &c. which book-men understand. Examples of contractions,

Jac.*obi* de Strada Epit.*ome* Thesaur.*i* Antiquitat.*um* h.*oc* e.*st*, Imperator.*um* Romanor.*um* Oriental.*ium* & Occidental.*ium* Icon.*es*, ex antiqu.*is* Numismatib.*us* quam fideliss.*ime* delineat. *arum*. Lugd.*uni*.

Onuph.*rii* Panvinii Fasti & Triumphi Romanor.*um* a reg.*e* Romul.*o* ad Carol.*um* V. Imperat.*orem* Triumphor.*um* majōr.*um* in urbe ob victor.*iam* celebrator.*um* typ.*us*, c.*um* XII. tabb.*ulis* ære incis.*is*.

DOUBLE CONSONANTS.

DOUBTS have often arisen in what cases to *double* the final consonant of verbs in the past tense and both participles; also the final consonant of irregular verbs in the active participle; they are as follow—

Abet, abetted
Abhor, abhorred
Abut, abutted
Acquit, acquitted
Admit, admitted
Allot, allotted
Amit, amitted
Annul, annulled
Appal, appalled
Apparel, apparelled
Avel, avelled
Aver, averred
Bag, bagged
Bam, bammed
Ban, banned
Bar, barred
Barrel, barrelled
Bed, bedded
Bedim, bedimmed
Bedrop, bedropped
Befal, befalling
Befit, befitted
Beg, begged
Beget, begetting
Begin, beginning
Bebob, bebobbed
Beset, besetting
Besmut, besmutted
Besot, besotted
Bespot, bespotted
Bestir, bestirred
Bestud, bestudded
Bet, betted
Bethral, bethralled
Betrim, betrimmed
Bias, biassed
Bib, bibbed
Bid, bidded
Blab, blabbed
Blot, blotted
Blur, blurred
Bob, bobbed
Bowel, bowelled
Brag, bragged
Brim, brimmed
Bud, budded
Cabal, caballed
Cancel, cancelled
Cap, capped
Capot, capotted
Carol, carolled
Cavil, cavilled
Channel, channelled
Chap, chapped
Char, charred
Chat, chatted
Chip, chipped
Chisel, chiselled
Chit, chitted
Chop, chopped
Clap, clapped
Clip, clipped
Clod, clodded
Clog, clogged
Clot, clotted
Club, clubbed
Cod, codded
Cog, cogged
Commit, committed
Compel, compelled
Complot, complotted
Con, conned
Concur, concurred
Confer, conferred
Control, controlled
Coquet, coquetted
Counsel, counselled
Cram, crammed
Crib, cribbed
Crop, cropped
Crum, crummed
Cub, cubbed
Cudgel, cudgelled
Cup, cupped
Cut, cutting
Dab, dabbed
Dag, dagged
Dam, dammed
Dap, dapped
Debar, debarred
Debel, debelled
Defer, deferred
Demit, demitted
Demur, demurred
Deter, deterred
Dig, digged
Dim, dimmed
Din, dinned
Dip, dipped
Disannul, disannulled
Discounsel, discounselled
Disenthral, disenthralled
Dishevel, dishevelled
Disinter, disinterred
Dispel, dispelled
Distil, distilled
Dog, dogged
Don, donned
Dot, dotted
Drag, dragged
Dram, drammed
Drib, dribbed
Drip, dripped
Drivel, drivelled
Drop, dropped
Drub, drubbed
Drug, drugged
Drum, drummed
Dub, dubbed
Duel, duelled
Dun, dunned
Embar, embarred
Embowel, embowelled
Emit, emitted
Empanel, empannelled
Enamel, enamelled
Englut, englutted
Enrol, enrolled
Entrap, entrapped
Equal, equalled
Equip, equipped
Escot, escotted
Excel, excelled
Extil, extilled
Extol, extolled
Fag, fagged
Fan, fanned
Fat, fatted
Fib, fibbed
Fig, figged
Fin, finned
Fit, fitted
Flag, flagged
Flam, flammed
Flap, flapped
Flat, flatted
Flit, flitted
Flog, flogged
Flop, flopped
Fob, fobbed

Forbid, forbidding
Forerun, forerunning
Foretell, foretelled
Foretel, foretelling
Forget, forgetting
Fret, fretted
Fub, fubbed
Fulfil, fulfilled
Fur, furred
Gab, gabbed
Gad, gadded
Gag, gagged
Gambol, gambolled
Gem, gemmed
Get, getting
Gip, gipped
Glad, gladded
Glib, glibbed
Glut, glutted
Gnar, gnarred
God, godded
Gospel, gospelled
Gravel, gravelled
Grin, grinned
Grovel, grovelled
Grub, grubbed
Gum, gummed
Gut, gutted
Hag, hagged
Handyel, handselled
Hap, happed
Hatchel, hatchelled
Hem, hemmed
Hip, hipped
Hit, hitting
Hitchel, hitchelled
Hop, hopped
Hovel, hovelled
Housel, houselled
Hug, hugged
Hum, hummed
Hyp, hypped
Jam, jammed
Japan, japanned
Jar, jarred
Jet, jetted
Jig, jigged
Immit, immitted
Impel, impelled
Inclip, inclipped
Incur, incurred
Infer, inferred
Inship, inshipped
Instal, installed
Instil, instilled
Instop, instopped
Inter, interred
Intermit, intermitted
Inthral, inthralled
Intromit, intromitted
Inwrap, inwrapped
Job, jobbed
Jog, jogged
Jag, jagged
Jut, jutted
Ken, kenned
Kennel, kennelled
Kernel, kernelled
Kid, kidded
Kidnap, kidknapped
Knab, knabbed
Knit, knitting
Knot, knotted
Knub, knubbed
Lag, lagged
Landdam, landdammed
Lap, lapped
Let, letting
Level, levelled
Libel, libelled
Lig, ligged
Lip, lipped
Lob, lobbed
Lop, lopped
Lug, lugged
Mad, madded
Man, manned
Manumit, manumitted
Map, mapped
Mar, marred
Marshal, marshalled
Marvel, marvelled
Mat, matted
Mistal, mistalled
Mistinter, misinterred
Mistel, mistelling
Mob, mobbed
Model, modelled
Mop, mopped
Mud, mudded
Nab, nabbed
Nap, napped
Net, netted
Newmodel, newmodelled
Nib, nibbed
Nim, nimmed
Nip, nipped
Nod, nodded
Nousel, nouselled
Nut, nutted
Occur, occurred
Omit, omitted
Ouset, ousetting
Overbid, overbidding
Overget, overgetting
Overred, overredded
Overrun, overrunning
Overset, oversetting
Overskip, overskipped
Overslip, overslipped
Overtop, overtopped
Overtrip, overtripped
Outbid, outbidding
Outrun, outrunning
Outsit, outsitting
Outstrip, outstripped
Outwit, outwitted
Pad, padded
Pan, panned
Parcel, parcelled
Pat, patted
Patrol, patrolled
Peg, pegged
Pen, penning
Permit, permitted
Pig, pigged
Pin, pinned
Pip, pipped
Pistol, pistolled
Pit, pitted
Plan, planned
Plat, platted
Plod, plodded
Plot, plotted
Plug, plugged
Pod, podded
Pommel, pommelled
Pop, popped
Postil, postilled
Pot, potted
Prefer, preferred
Pretermit, pretermitted
Prig, prigged
Prim, primmed
Prog, progged
Prop, propped
Propel, propelled
Pulvil, pulvilled
Pun, punned
Pup, puppied
Put, putting
Quarrel, quarrelled
Quip, quipped
Quit, quitting
Quob, quobbed
Ram, rammed
Rap, rapped
Ravel, ravelled
Readmit, readmitted
Rebel, rebelled
Recal, recalled
Recommit, recommitted

Recur, recurred
Refel, refelled
Refer, referred
Refit, refitted
Regret, regretted
Reinstal, reinstalled
Remit, remitted
Repel, repelled
Restem, restemmed
Revel, revelled
Revictual, revictualled
Rid, ridding
Rig, rigged
Rip, ripped
Rival, rivalled
Rivet, rivetted
Rivet, rivetted
Rob, robbed
Rot, rotting
Rowel, rowelled
Rub, rubbed
Run, running
Rut, rutted
Sag, sagged
Sap, sapped
Scab, scabbed
Scan, scanned
Scar, scarred
Scrub, scrubbed
Scud, scudded
Scum, scummed
Set, setting
Sham, shammed
Shed, shedding
Ship, shipped
Shog, shogged
Shovel, shovelled
Shred, shredding
Shrivel, shrivelled
Shrub, shrubbed
Shrug, shrugged
Shun, shunned
Shut, shutting
Sin, sinned
Sip, sipped
Sit, sitting
Skim, skimmed
Skin, skinned
Skip, skipped
Slam, slammed
Slap, slapped
Slip, slipped
Slit, slitting
Slop, slopped
Slot, slotted
Slur, slurred
Smut, smutted
Snap, snapped
Snip, snipped
Snivel, snivelled
Snub, snubbed
Snug, snugged
Sob, sobbed
Sop, sopped
Sot, sotted
Span, spanned
Spar, sparred
Spet, spetted
Spin, spinning
Spit, spitting
Split, splitting
Spot, spotted
Sprig, sprigged
Spur, spurred
Squab, squabbed
Squat, squatted
Stab, stabbed
Star, starred
Stem, stemmed
Step, stepped
Stir, stirred
Stop, stopped
Strap, strapped
Strip, strapped
Strut, strutted
Stub, stubbed
Stud, studded
Stun, stunned
Stun, stunned
Stut, stutted
Submit, submitted
Sum, summed
Sun, sunned
Sup, supped
Swab, swabbed
Swag, swagged
Swap, swapped
Swig, swigged
Swim, swimming
Swop, swopped
Tag, tagged
Tan, tanned
Tap, tapped
Tar, tarred
Ted, tedded
Thin, thinned
Thrid, thridded
Throb, throbbed
Thrum, thrummed
Tin, tinned
Tinsel, tinselled
Tip, tipped
Top, topped
Trammel, trammelled
Transcur, transcurred
Transfer, transferred
Transmit, transmitted
Trap, trapped
Travel, travelled
Trepan, trepanned
Trig, trigged
Trim, trimmed
Trip, tripped
Trot, trotted
Tug, tugged
Tun, tunned
Tunnel, tunnelled
Tup, tupped
Twin, twinned
Twit, twitted
Victual, victualled
Unbar, unbarred
Unbed, unbedded
Unbias, unbiassed
Unbowel, unbowelled
Unclog, unclogged
Unlam, unlammed
Underbid, underbidding
Underpin, underpinned
Underprop, underpropped
Underset, undersetting
Unfit, unfitted
Ungod, ungodded
Unkennel, unkennelled
Unknit, unknitting
Unknot, unknotted
Unman, unmanned
Unpeg, unpegged
Unpin, unpinned
Unravel, unravelled
Unrig, unrigged
Unrip, unripped
Unrivet, unrivetted
Unrol, unrolled
Unship, unshipped
Unstop, unstopped
Unwit, unwitted
Wad, wadded
Wag, wagged
War, warred
Wed, wedded
Wet, wetting
Whet, whetted
Whip, whippell
Whiz, whizzing
Win, winning
Wit, witting
Worship, worshipped
Wot, wotted
Wrap, wrapped

THOUGH a variety of opinions exist as to the individual by whom the art of printing was first discovered; yet all authorities concur in admitting Peter Schoeffer to be the person who invented *cast metal types*, having learned the art of *cutting* the letters from the Guttembergs; he is also supposed to have been the first who engraved on copper plates. The following testimony is preserved in the family, by Jo. Fred. Faustus of Aschesfenburg; [Peter Schoeffer of Gernsheim, perceiving his master Fausts design, and being himself desirous ardently to improve the art, found out (by the good providence of God) the method of cutting (*incidendi*) the characters in a *matrix*, that the letters might easily be singly *cast*; instead of being *cut*. He privately *cut matrices*] for the whole alphabet: Faust was so pleased with the contrivance that he promised Peter to give him his only daughter Christina in marriage, a promise which he soon after performed. But there were many difficulties at first with these *letters*, as there had been before with wooden ones, the metal being too soft to support the force of the impression: but this defect was soon remedied, by mixing a substance with the metal which sufficiently hardened it.

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EXPLANATION OF THE CORRECTIONS.

A WRONG letter in a word is noticed by drawing a short perpendicular line through it, and making another short line in the margin, behind which the right letter is placed. (See No. 1.) In this manner whole words are corrected, by drawing a line across the wrong word, and making the right one in the margin, opposite the faulty line.

A turned letter is noticed by making a dash under it, and the mark, No. 2, in the margin. If a corrector is not able to distinguish such turned letters as have a resemblance to others, it is much better to mark such letters in the margin.

If letters or words are to be altered from one character to another, a parallel line or lines should be made underneath the word or letter, viz. for capitals, three lines; small capitals, two lines; and Italic, one line: and write in the margin opposite the line where the alteration occurs, *Caps*, *Small Caps*, or *Ital.* (See No. 3.)

When letters or words are set double, or are required to be taken out, a line is drawn through the superfluous word or letter, and the mark, No. 4, placed opposite in the margin.

Where the punctuation requires to be altered, the colon, and period, if marked in the margin, should be encircled. (See No. 5.)

Where a space is wanting between two words or letters which are to be separated, a parallel line must be drawn where the separation ought to be, and the sign, No. 6, placed opposite in the margin.

No. 7 describes the manner in which the hyphen and ellipsis line are marked.

Should a letter have been omitted, a caret is put at the place, and the letter marked as No. 8.

Where words or letters that should join are

separated, or when a line is too wide spaced, the mark, No. 9, must be placed under the separation, and the junction signified by that in the margin.

Where a new paragraph is required, a line in the shape of a crotchet should be made, and the same mark, No. 10, placed in the margin.

No. 11 shews the way in which the apostrophe, inverted commas, the star, and other references and superior letters and figures are marked.

Where two words are transposed, the word placed wrong should be encircled, and the mark, No. 12, placed in the margin: but where several words require to be transposed, their right order is signified by a figure placed over each word, and the mark, No. 12, in the margin.

Where words have been struck out that have afterwards been approved of, dots should be marked under such words, and in the margin write *Stet.* (See No. 13.)

Where a space sticks up between two words, a perpendicular stroke is put in the margin. (No. 14.)

Where several lines or words are added, they should be written at the bottom of the page, and a line drawn from the place where the insertion begins, to those lines or words. (See No. 15.) But if more is added than can be contained at the foot of the page, write in the margin, *Out, see copy,* and enclose the omission between brackets, and insert the word *Out,* in the margin of the copy.

Where letters or lines stand crooked, they are noticed by drawing lines before and after them. (See No. 16.)

When a smaller or larger letter, of a different fount, is improperly introduced into the page, it is noticed by the mark, No. 17.

If a paragraph is improperly made, a line should

be drawn from the broken-off matter to the next paragraph, and write in the margin, *No break.* (See No. 18.)

Where a word or words have been left out, or are to be added, a caret must be made in the place where they are intended to come in, and the word or words written in the margin. (See No. 19.)

Inaccuracy may proceed either from inattention and carelessness in the printer, or else to his non-acquaintance with all languages, both ancient and modern; also to a deficiency of knowledge in the arts and sciences, and other abstruse subjects, wherein technical phrases and terms often occur, which, unless very distinctly written, may be misunderstood by the most attentive and accurate corrector.

When it is considered that a part of each of these literary subjects may pass through the hands of the corrector, in his professional capacity, in one day, he who wishes to make accuracy his peculiar study, need not be ashamed nor afraid to solicit the aid of the indulgent author, to accomplish an end so desirable, and which would be so satisfactory to all parties.

In all cases, therefore, but particularly in those where the author has it not in his power to see the proof sheets, accuracy and distinctness of copy is peculiarly desirable.

If attention be paid to right spelling of proper name of persons, places, technical terms, &c. the finishing of sentences marked by the period, that the author's ideas may not be misunderstood, and the hand-writing tolerably legible, much time and a very considerable expense would be saved, and the great object of accuracy gained, by gentlemen who communicate their sentiments to the public through the medium of the press.

CORRECTING IN THE METAL.

By correcting, we understand the rectifying of such faults, omissions, and repetitions, as are made by the compositor, either through inadvertency or carelessness. And though the term of *corrections* is equally given to the alterations that are made by authors, it would be more proper to distinguish them by the name of *emendations*; notwithstanding it often happens, that after repeatedly mending the matter, the first conceptions are at last recalled: for the truth thereof none can be better vouchers than compositors, who often suffer by fickle authors that know no end to making alterations, and at last doubt whether *they* are right or wrong; whereby the work is retarded, and the compositor greatly prejudiced in his endeavours; especially where he is not sufficiently satisfied for spending his time in humouring such whimsical gentlemen.

Correcting is the most disagreeable part of a compositor's business, attended not only with loss of time, but great fatigue, from leaning over the stone, and is therefore extremely prejudicial to health. To avoid this we recommend silence, and attention when at work. The noise and confusion which too often prevail in a printing-office, from light and frivolous conversation, not only retard business, but at the same time distract the attention of the compositor from the subject he has in hand, and cause him to run into such mistakes as can only be rectified by loss of time, and fatigue at the imposing stone. Some men, no doubt, are capable of supporting a conversation, and at the same time compose correctly, but their noise must confuse those who are unable to preserve that accuracy but in quiet, and by close attention to their copy. The habit of talking while distributing is too often prac-

tised; and though those who are composing need not join in the conversation, yet they are disturbed, and diverted from the subject they have in hand. The press-room should, if possible, be separated from the composing-room, as the pressmen are generally discussing some *important topic*, and are less liable to feel the inconvenience of much talking.

The first proof should merely contain the errors of the compositor, but it too frequently happens that the corrector heightens them by his peculiarities; when this is unnecessarily done, which is too often the case, it is an act injustice to the compositor: it is sufficient for him to rectify such mistakes as arise either from inattention or want of judgment.*

We certainly agree, in conjunction with all our contemporaries, with the necessity for the immediate correction of proofs by the compositor; still we consider that we should not have performed our duty, (according to our original intention) were we to urge an *ex parte* case, when a similar injunction is equally incumbent on both parties. Ought not the reader or overseer to be equally as punctual in despatching the proofs in his department? Can it reasonably be expected that the compositor will feel that inclination to forward his proof when he knows that the reader will not equally assist him?†

* By the term, "want of judgment," we beg not to be understood as including the alteration of points, that being a subject which can never be reconciled: the compositor ought not to suffer from the caprice of a reader, in altering commas and semicolons in the first proof (unless the sense is perverted), which he not unfrequently re-alters in the second, from a doubt upon his mind which would be the most proper points to be adopted.

† It is too well known to all compositors, the delay and inconvenience (not to say actual loss), which they daily suffer from the want of a regular dispatch of proofs; it is not for us to say whether it arises from an overpressure of business, or whatever cause; but this we can state, (having not only repeatedly witnessed it, but also greatly suffered from it ourselves,) that there are some overseers who do not give themselves the least concern about reading proofs, (provided the work is not in a particular hurry) as long as the com-

Should a compositor have transposed two or more pages, either from a mistake in the folios, or any other cause, he must then unlock such quarter or quarters, and loosening the cross or crosses from the furniture, he next lifts the chase and the remaining quarters off the stone; should he have furniture sufficient round each page, he may move them into their proper stations by pressing the balls of his thumbs and fingers against the furniture at the head, foot, and sides of each page:—if the letter be small it will be advisable to wet the pages, because few imposing stones are perfectly horizontal, or so steady that they will not shake when touched, or by the motion of the floor occasioned either by persons walking, or the dragging of forms.

Should a compositor find that his pages *hang*, he must unlock that quarter or quarters, and pat the face of the type with the balls of his fingers, and so twist it, until he gets it into a square position.

positor can take together more letter to make up: at length, being run out of sorts, he is necessitated to press for his proofs, and should the reader then have leisure, he probably receives the whole of them as fast as he can correct, which is very much to his disadvantage in two points of view:—first, he has to perform a disagreeable task, which takes longer time than if he had received them as they were imposed, because much correcting fatigues, and makes a man careless, that would otherwise have done his work more justice: secondly, should his proofs turn out foul, and take up a considerable time, his bill for that week must be greatly diminished, as few men make allowance from their week's earnings, for the corrections which may occur in the following one; now, if the proof had been read when it was imposed, it would have been corrected without his feeling the burthen; add to this, the loss of making up and clearing away so much letter, which is equally detrimental to the employer; because he is not unfrequently obligated to distribute such standing matter before it is worked off, on account of some new job of a very urgent nature: this is another example of the reciprocality which exists between the employer and the employed. Again, should the press stand idle in consequence of a compositor's not correcting his proof, must not the charge fall equally upon the overseer or reader, if they have kept it by them some days without reading, and possibly the compositor has nothing to do at the time that the proof is not read; and when it is sent up, probably he has got a little work, which makes him indifferent about correcting at the moment. We ever shall contend, be the station of the parties what it may, high or low, rich or poor, for "equal rights, and equal laws."

When a compositor unlocks his form, he should be careful not to leave the unlocked quoins too slack, as the force necessary to loosen the others may either *squabble* the matter, or occasion it to *hang*.

A compositor should possess the following requisites before he begins to correct—

"What is required of a compositor when he goes about correcting a foul proof, is a sharp bodkin and patience, because without them the letter cannot escape suffering by the steel; and hurrying will not permit him to justify the lines true. No wonder, therefore to see pigeon-holes in one place, and pie in another." *

When he has gathered as many corrections between the thumb and fore-finger of his left hand as he can conveniently hold, or in his composing-stick, beginning at the bottom of the page, in order that they may follow regular; and an assortment of spaces on a piece of paper, or, what is more convenient, in a small square box, with partitions in it, let him take the bodkin in his right hand, and instead of raising each letter he may have occasion to alter, he should place the point of the bodkin at one end of the line, and with the fore-finger of his left hand against the other, raise the line altogether, sufficiently high to afford him a clear view of the spacing; he may then change the faulty letter, and alter his spaces before he drops the line. By observing this method, he will not injure the type, which must be

* In proof of the trouble and inconvenience to which compositors are not unfrequently subjected, we present the reader with the following epitaph, which, no doubt, was written by a Typo, whilst performing the most disagreeable task attendant on his profession:

"No more shall *copy bad* perp'ex my brain,
No more shall *type's small face* my eye-ball's strain;
No more the *proof's foul page* create me troubles,
By *errors, transpositions, quts*, and *doubles*:
No more my *Ars I shall ache* from author's whims,
As *overrunnings, driving-outs*, and *ins*;
The *surly pressman's frown* I now may scoff:
Revised, corrected, finally wrought off."

the case where the bodkin is forced either into the sides or heads; it likewise ensures a greater degree of regularity where there may be occasion to alter the spacing, and will not take up more time than the other method.

In tables, and such like matter, where rules prevent the lines from being raised, as just noticed, the letters must be then drawn up by the bodkin; this is done by the compositor holding the latter fast in his right hand, with the blade between his fore-finger and thumb, within about half an inch or three quarters of the point, thus guiding it steadily to the faulty letter, he sticks the point of the bodkin into the neck of the letter, between the beard and the face, and thus draws it up above the other types, so that he can take it out with the fore-finger and thumb of his left hand. In performing this operation, as small an angle as possible should be made with the blade of the bodkin, viz. it should be kept as flat as possible to the face of the type, but the blade of the bodkin should not touch any of the surrounding neighbours of the faulty letter, as the slightest graze imaginable must injure their face, and consequently they will appear imperfect in the next proof, when he will have the trouble of altering them, and his employer suffers the loss of his type; we are again brought to the union of interest between the parties.

The reason why the bodkin blade should be kept flat to the form is, because a small horizontal entrance of its point into the neck of the letter will raise it above the face of the form; but should the bodkin be held nearly upright it would not have sufficient purchase to draw the letter up, because the weight of the type and its close confinement, would have greater power than the sharp point of

the steel. By pressing sideways, the bodkin blade acts as a lever, even though it has no other purchase than merely the slight motion of the hand.

The most careful compositor cannot at all times avoid leaving a word or words out, or composing the same word twice; when this happens, he should consider the best mode of rectifying the accident, by driving out or getting in, either above the error or below it; this ascertained, let the matter be taken into a galley, and overrun in the composing stick:—overrunning on the stone is an unsafe, unworkmanlike, and dilatory method, destroys the justification, and renders the spacing uneven.

One of our predecessor gives the following:—

"But a great deal of trouble might be saved in cases of outs and doubles, would correctors try to add as much as will fill up the double; or to shorten the matter, to make room for an out; unless both the one and the other are too considerable for that expedient; which otherwise might be safely ventured, without either castrating or corrupting a writer's meaning. This would be a sure means to secure a neat compositor's workmanship and care in true spacing his matter; whereas that beauty is lost by alterations and over-running."

In correcting, care should be taken not to hair-space a line, if it can possibly be prevented, but avoid it by overrunning either backward or forward. He should also, in overrunning the matter, use the division as little as possible; for though he may carefully follow the instructions laid down in this work, on the subject of spacing and dividing, yet the effect of his attention will be completely destroyed, if not followed up at the stone.

The following observation has been made with respect to the dispatch of proofs:—

"The first proof being corrected, a perfect sheet is pulled clean, to be sent to the author, or to the person by him authorized; either of whom, if they understand the nature of printing, will not defer reading the sheet, but

return it without any alteration perhaps, to be made ready for the press. But because such good authors are very scarce, compositors are discouraged every time they send a proof away, as not knowing when or how it may be returned, and how many times more it will be wanted to be seen again, before the author is tired, or rather ashamed, of *altering*."

Ye Authors list! we must a tale unfold,
Which, doubtless, some of you have oft been told;
You little dream how much poor *Typo's* vex'd,
When with *b ad copy* his mind's rore perplex'd;
Nor is this all, he still has cause to dread
The *Ben fer's gall*; when first his *proof* is read:
Corrected now, to you 'tis straight convey'd,
And in a trice the greatest haste's me 'e;
Methinks we see you, every *page* survey,
As with blunt pen the *world's* neap you portray!
The numerous *marks*, on its *margin's* plain,
Appear like soldiers in the battle slain!
The *proof's* return'd---the *Chapel's members* all
Hush to the *stone*, obedient to his call,
To view this carnage, though no blood appears,
Yet e'en the sight awakes their manly fears!
Aloud they roar---enough to strike him dead,
"*A mob, a mob, th' rist ach must be read!*"
His grief to soothe---they, sympathising, cawl,
"*Patience and a sharp knife cures all!*"
His form, with heavy heart, he then lays up,
And *letters* seeks, which fill his bitter cup:
How often, when *correcting* at the *stone*,
He's pray'd for you, while *breaking his breast-bone*,
Reflect, when next you wield your potent quills,
And spare the printer all these dreaded ills:
Revise, transcribe, and make your copy right,
Thus save his labour and his precious sight!
For this, your pardon we most humbly crave,
And of this subject beg to take our leave.

CHAP. IX.

THE DEPARTMENT OF A READER.

HAVING just given an account of the nature of correcting, and the duties of a corrector, we deem it not improper, considering the vast importance of this branch of our profession, to enter somewhat more minutely into the subject.

When it is considered how much the credit of our art, and the general interest of literature depend on the grammatical accuracy and typographical correctness of our labours, it will readily appear that a careful and steady *Reader* must be indispensible in every printing-office. We shall therefore detail the business and qualifications requisite to form such a reader, or corrector of the press, as can alone save the typographic art from degenerating into one of those ordinary occupations that require only the mechanical operation of the fingers, to form a perfect and complete workman.

It is always desirable that a reader should have been previously brought up a compositor. By his practical acquaintance with the mechanical departments of the business, he will be better able to detect those manifold errata which, unperceived by the mere man of learning and science, lie lurking, as it were, in a thousand different forms, in every *sheet*; and, if overlooked, evince a carelessness and inattention to our labours, that must always offend the just taste and professional discernment of all true lovers of correct and beautiful typography.

Some of the principal imperfections which are most easily observed by the man of practical knowledge in the art of printing, are the following: viz. imperfect and wrong-founted, or inverted letters,

particularly the lower-case *s*, the *n*, and the *u*; awkward and irregular spacing; uneven pages or columns; a false disposition of the reference marks; crookedness in words and lines; bad making-up of matter; erroneous indention, &c. These *minutiæ*, which are rather imperfections of workmanship, than literal errors, are apt to be overlooked and neglected by those readers who have no idea of the liability there is, even with the most careful compositor, occasionally to fall into them.

It is desirable that a reader should have been brought up a compositor, because the imperfections above enumerated may not be observed by one who is not practically acquainted with every department of the art. Nevertheless, long and frequent habits of reading proof-sheets for the press, a quick eye, and a steady mind, will certainly enable a person, though not a compositor, to detect those minor deviations from correctness, which the inexperienced and the careless are apt to overlook. But while these habits are acquiring, without which no person can be safely entrusted to read a sheet for press, the labours of the printer are liable to go forth into the world in a manner that will reflect discredit on the employed, and give offence to the employer. This observation equally refers to those readers who have previously been compositors. No form, therefore, ought to be put to press, until it has been read and revised by an *experienced* reader.

But even habit itself is not sufficient to form a competent reader, unless he possess those literary qualifications which are obviously necessary in an employment of this nature. No one should undertake this arduous task, until he has made himself a complete master of, at least, his native language.

A reader ought to be well versed in all the pecu-

liarities of the English tongue—its idioms, its true genius, and singular adaptation to that variety of expression in which we embody our thoughts, and portray the human intellect. Instances will frequently occur, particularly in large printing-offices, where a knowledge of this nature and extent will be almost indispensable. Many, even of our first-rate authors, are too apt, in the warmth of discussion, the flights of speculation, and the laborious exercise of the thinking powers, to pass over, unobserved, those deviations from pure diction and strict grammatical accuracy, which they have imperceptibly acquired the habit of falling into, by their ordinary conversation with mankind. Now although no corrector of the press can strictly be required to do otherwise than to *follow his copy*, that is, faithfully to adhere to the original, with all its defects, yet every one must perceive, that it would often be performing a friendly, and perhaps a charitable service, to point out, in proper time, imperfections and mistakes which have escaped the observation of a quick or voluminous writer. This remark will however chiefly apply to inaccurate orthography, and glaring instances of erroneous syntax. With the spirit, the opinions, the whims of an author, no corrector of the press has any business to interfere. Some writers, after all the labours of the printer, and the skill of the reader, are doomed to make their appearance before the world with many "imperfections on their heads," are condemned to bear the contumely, and face the broad eye of an unrelenting critic.

We shall conclude this part of our subject by remarking, that a reader ought not to be of a captious or pedantic turn of mind: the one will render his situation and employment extremely unpleasant,

and the other will tempt him to habits destructive of that consistency of character in his profession which he ought ever scrupulously to maintain. We are here alluding to a strict uniformity in the use of capitals, in orthography, and punctuation.* Nothing can be more vexatious to an author, than to see the words *honour, favour*, &c. spelt with, and without the *u*. This is a discrepance which correctors ought studiously to avoid. The above observations equally applies to the capitaling of noun-substantives, &c. in one place, and the omission of them in another. However the opinions of authors may differ in these respects, still the system of spelling, &c. must not be varied in the same work: but whatever authority is selected should be strictly adhered to, whether it be Johnson, or any of his contemporaries.

Such being the qualifications of a reader, it will not be improper to glance at the application of those attainments, by exhibiting the process which proof-sheets ought to undergo before they are put to press.

While the pressman is engaged in pulling a proof,

* It too frequently happens, that when a compositor is called from his frame, and is appointed to fill the situation of a reader, and is admitted into the sanctum,† much less the sanctum sanctorum,‡ that he considers the importance of his station has placed him above the rank of his former associates: and they, on the other hand, conceive that he still is [literally] but as one of themselves; because both hold their situations by the same tenure, namely, a supply of business and good conduct: it is not with them, as with privy councillors, once a reader always a reader; consequently, it behoves them so to acquit themselves, that they may retain the esteem of their fellow-workmen, lest they should unfortunately be forced into the ranks,§ when they would be continually upbraided for their improper conduct. Should a compositor have a foul proof, either from inability or carelessness, the reader often taunts him with it: the compositor very aptly replies, "if we could compose without faults, there would be no necessity for readers!" We have known instances of such readers, when at ease, not possessing half the ability of the compositors whom they wish to hold up to derision; and who also committed equally as many errors when composing! Let such men reflect on this, "He that is without fault, let him cast the first stone."

† Technical term for the reader's room. ‡ Do. overseer or employer's room.
§ Technically applied to compositors in their frames.

the compositor who imposed the sheet ought to collect and arrange the copy, that both may be delivered to the reader for the purpose of comparing or reading; in glancing over the proof to clear it of literals, he has the copy lying upon his desk, to refer to in case of doubt or misconception. Having made this slight comparison of the copy and the proof, he then calls his reading-boy, to read the copy aloud to him. This boy should be able to read any copy put into his hands with ease and distinctness; he should be instructed not to read too fast, but to pay the same attention to the subject, as though he were reading for his amusement or edification The eye of the reader should not follow, but rather precede the voice of the boy; accustomed to this mode, he will be able to anticipate every single word in the copy; and should a word or sentence happen to have been omitted in the proof, his attention will the more sensibly be arrested by it, when he hears it pronounced by his reading-boy. He ought to be careful lest his eyes advance too far before the words of the boy; because, in his attention to the author's meaning, he will be apt to read words in the proof which do not actually appear there, and the accuracy of the reading-boy will but tend to confirm him in the mistake.

After the proof has been read with the reading-boy, the signatures, catch-words, head-lines, titles, and folios of each page, should be most carefully examined; and the number (if more than one) of the volume, signature, and *prima* of the ensuing sheet, accurately marked on the margin of the copy, and a crotchet made between the last word of that and the first of the next sheet, in order that the compositor, should he not have composed beyond the sheet, may know where to begin, without having the trouble of referring, either to the proof or the form, and the

reader will be certain that the commencement is right when he gets the succeeding sheet—this prevents unnecessary trouble both to the reader and compositor.

Before the proof is sent to the compositor to be corrected in the metal, an entry should be made in a book, according to the following plan :—

Date of reading.	Signatures.	Names of Works.	Sent out.	Returned	Read for Press.
1821			1821	1821	1821
Jan. 5	C	Puckle's Club.....	Jan. 6	Jan. 8	Jan. 11
8	G	Decorative Printing,..	9	10	12
10	Q	Magna Charta.....	11	12	15
11	B	Physiognomical Portraits	11	13	16

This account of the different stages of each proof-sheet, will enable the reader to furnish the employer or overseer with an exact account of the state of each work, without trouble or inconvenience.

The form being corrected in the metal, a *revise* should be immediately pulled, and both conveyed to the reader, whose duty it is to collate the corrected sheet with the one before read, in order to ascertain if the corrections have been properly made, and that others have not been created in the process. It is said to be the practice of some readers not to revise their proofs, but immediately to proceed to the forwarding of them for press. This is a dangerous mode of procedure, and ought *never* to be adopted. To clear some proof-sheets of their imperfections is no trifling task; an error once discovered, is of too much importance to be passed unobserved: every reader is liable to this, unless he revise each page with the greatest attention. There are many com-

positors whose proofs are so foul, that it is almost an impossibility for them to correct all the marks at one time, consequently it is indispensable to have a second proof corrected before it can be sent out; and it not unfrequently happens that compositors, in the course of correcting, either transpose a letter or word, or else alter a letter in a word that is not marked, thereby not only leaving one error uncorrected, but also making another: likewise, when the line is raised to change the spaces, it often happens that some of them get transposed. Consequently it is absolutely necessary, in revising a proof, that the reader should not only look at the word marked, but he ought also to glance his eyes across every line in which an alteration had been made.

In those offices where more than one reader is employed, it is advisable that a proof-sheet should be read over by at least two of them;* because the eye, in traversing the same ground, is very liable to be drawn into mistake and oversight. The interest having abated which was excited by the first reading, a certain degree of listlessness imperceptibly steals upon the mind, which greatly endangers the correctness of a proof. Should *outs* or *doubles* occur in a proof, it ought to be again read by copy, to prevent any improper connexion in the overrunning, either by the insertion or removal of them.

* Although we have recommended the propriety of proofs being examined by more than one reader, yet we beg to be understood as not admitting each reader to the privilege of altering the punctuation; this duty should be exclusively confined to one individual; as no two men point alike, nor will a subject always appear to a person in the same light upon a second or third reading: consequently where a compositor is liable, in this particular, to the whim or caprice of several readers, it being neither more nor less than the taking of so much money out of his pocket, because his valuable time is unnecessarily frittered away: nor is this the only evil, the employer not only has the work retarded, but also his types injured, as well as the liability of creating fresh errors, &c. We are once more arrived at a point in proof of the undoubted reciprocality of interests.

Stower concludes with these observations:—

"It may not be improper, in this place, just to take notice of the great danger to the correctness of a work which arises from the practice, too common with some authors, of keeping their proof-sheets too long in their hands, before they are returned to the printer. As the pages in the metal get dry, the adhesion of the types to each other is weakened, and the swell or extension of the quoins and furniture, which the moisture had occasioned, is removed; so that there is great danger of letters falling out, when a form is long kept from the press. Nor is the danger which is hereby occasioned to correctness the only inconvenience; the impatience of authors to see their works in a fit state for publication is almost proverbial. The pleasure arising from beholding, as it were, the 'form and texture' of one's thoughts, is a sensation much easier felt than described. That authors, therefore, may partake of this pleasure in a speedy and regular succession, they should make a point of forwarding their proof-sheets to the printer as quick as possible, not only that they may the sooner be got ready for press, but that the work may proceed in a regular manner, without being interrupted by the forwarding of other works in lieu of that, the proof-sheets of which are detained beyond the proper time in the hands of the author.

"Authors are very apt to make alterations, and to correct and amend the style or arguments of their works when they first see them in print. This is certainly the worst time for this labour, as it is necessarily attended with an expense which in large works will imperceptibly swell to a serious sum; when, however, this method of alteration is adopted by an author, the reader must always be careful to read the whole sheet over once more with very great attention, before it is finally put to press.

"A proof-sheet having duly undergone this routine of purgation, may be supposed to be as free from errata as the nature of the thing will admit, and the word 'Press' may be written at the top of the first page of it. This is an important word to every reader: if he have suffered his attention to be drawn aside from the nature of his proper business, and errors should be discovered when it is too late to have them corrected, this word 'Press' is as the signature of the death-warrant of his reputation; and if he is desirous of attaining excellence in his profession, will occasion an uneasiness of mind which will but ill qualify him for reading other proof-sheets with more care

and correctness. A reader, therefore, should be a man of one business—always upon the alert—all eye— all attention. Possessing a becoming reliance on his own powers, he should never be too confident of success. Imperfection clings to him on every side!—Errors and mistakes assail him from every quarter! His business is of a nature that may render him obnoxious to blame, but can hardly be said to bring him in any very large stock of praise. If errors escape him he is justly to be censured —for *perfection is his duty!* If his labours are wholly free from mistake—which is, alas! a very rare case—he has done no more than he ought, and, consequently can merit only a comparative degree of commendation, in that he had the good fortune to be more successful in his labours after perfection than some of his brethen in the same employment."

In the final revision of a proof-sheet, the eye must be cast along the sides and heads of the respective pages, lest any letter should have fallen out, any crookedness have been occasioned in the locking up of the form, any battered letters, or any *bite* from the frisket.

Reader, how can you wish to see,
Each proof from errors always free?
When next in gall you dip your pen,
Reflect, that Printers are but men!
Why then expect in them to trace,
What's not found in the human race?
Should Providence this blessing send,
From that hour must your business end.

CHAP. X.

BEING advanced thus far on our journey, and in our progress having touched upon most of the subjects connected with the composing department, we now beg leave, in closing the first portion of this volume, to present our readers, in the three following chapters, with a view of those materials which, though last in our arrangement, are still not the least in importance, namely, alphabets of the various known languages, and such other characters as are connected with every department of Literature and the Fine Arts. We are well aware that many will condemn their insertion as unnecessary; but, let us ask, are they not of the utmost importance to young compositors, who probably may not have seen any of them before? and when met with in old books, they are quite at a loss to know their meaning and signification: therefore, we trust that their utility will prove a sufficient apology for their appearance.

MATHEMATICAL, ALGEBRAICAL, AND GEOMETRICAL CHARACTERS.

\+ *plus, or more*, is the sign of real existence of the quantity it stands before, and is called an affirmative or positive sign. It is also the mark of addition: thus, $a + b$, or $6 + 9$, implies that a is to be added to b, or 6 added to 9.

— *minus*, or *less*, before a single quantity, is the sign of negation or negative existence, shewing the quantity to which it is prefixed to be less than nothing. But between quantities it is the sign of substraction; thus, $a - b$, or $8 - 4$, implies b subtracted from a, or 8 after 4 has been substracted.

$=$ *equal.* The sign of equality, though Des Cartes and some others use this mark ∞; thus, $a = b$ signifies that a is equal to b. Wolfius and some others use the mark $=$ for the identity of ratios.

$\times$ *into*, or *with*. The sign of multiplication, shewing that the quantities on each side the same are to be multiplied by one another, as $a \times b$ is to be read, a multiplied into b; 4×8, the product of 4 multiplied into 8. Wolfius and others make the sign of multiplication a dot between the two factors; thus, $7 . 4$ signifies the product of 7 and 4. In algebra the sign is commonly omitted, and the two quantities put together; thus, $b\ d$ expresses the product of b and d. When one or both of the factors are compounded of several letters, they are distinguished by a line drawn over them; thus, the factum of $a + b - c$ into d, is wrote $d \times \overline{a + b - c}$. Leibnitz, Wolfius, and others, distinguish the compound factors, by including them in a parenthesis thus $(a + b - c)\ d$.

$\div$ *by*. The sign of division; thus, $a \div b$ denotes the quantity a to be divided by b. Wolfius makes the sign of division two dots; thus, $12 : 4$ denotes the quotient of 12 divided by $4 = 3$. If either the divisor or dividend, or both, be composed of several letters; for example, $a + b \div c$, instead of writing the quotient like a fraction.

$\circledcirc$ *involution*. The character of involution.

$\nu\nu$ *evolution*. The character of evolution, or the extracting of roots.

$>$ or $\sqsubset$ are signs of majority; thus, $a > b$, expresses that a is greater than b.

$<$ or $\sqsupset$ are signs of minority; when we would denote that a is less than b.

∽ is the character of similitude used by Wolfius, Leibnitz, and others: It is used in other authors for the difference between two quantities, while it is unknown which is the greater of the two.

: : *so is.* The mark of geometrical proportion disjunct, and is usually placed between two pair of equal ratios, as 3 : 6 : : 4 : 8, shews that 3 is to 6 as 4 is to 8.

: or .·. is an arithmetical equal proportion; as, 7 . 3 : 13 . 9; i. e. 7 is more than 3, as 13 is more than 9.

□ Quadrat, or regular quadrangle; as follows, □ AB = □ BC; i. e. the quadrangle upon the line AB is equal to the quadrangle upon the line BC.

△ Triangle; as, △ ABC = △ ADC.

∠ an Angle; as, ∠ ABC = ∠ ADC.

⊥ Perpendicular; as, AB ⊥ BC.

▭ Rectangled Parallelogram; or the product of two lines.

‖ The character of parallelism.

∠ equiangular, or similar.

⊥ equilateral.

⌐ right angle.

° denotes a degree; thus 45° implies 45 degrees.

' a minute; thus, 50', is 50 minutes: ", "', "", denote seconds, thirds, and fourths: and the same characters are used where the progressions are by tens, as it is here by sixties.

÷÷ the mark of geometrical proportion continued, implies the ratio to be still carried on without interruption, as 2, 4, 8, 16, 32, 64 ÷÷ are in the same uninterrupted proportion.

$\sqrt{}$ *irrationality.* The character of a surd root, and shews, according to the index of the power that is set over it, or after it, that the square, cube, or other root, is extracted, or to be extracted; thus, $\sqrt{}16$, or $\sqrt{}^{2}16$, or $\sqrt{}.(2)\ 16$, is the square root of 16. $\sqrt[3]{}25$, the cube root of 25, &c.

—: the differences, or excess.

Q or q, a square.

C or c, a cube.

Q Q, The ratio of a square number to a square number.

These and several other signs and symbols, we meet with in mathematical and algebraical works; though authors do not confine themselves to them, but express their knowledge different ways, yet so as to be understood by those skilled in the science. In algebraical works, therefore, in particular, gentlemen should be very exact in their copy, and compositors as careful in following it, that no alterations may ensue after it is composed: since changing and altering work of this nature is more troublesome to a compositor than can be imagined by one that has not a tolerable knowledge of printing. Hence it is that very few compositors are fond of algebra, and rather choose to be employed upon plain work, though less profitable to them than the former; because it is disagreeable, and injures the habit of an expeditious compositor besides. In the mean time we venture to say, that the composing of algebra might be made more agreeable were proper cases contrived for the letter and sorts belonging to such work, where it is likely to make a return towards its extraordinary charges.

CELESTIAL AND ASTRONOMICAL SIGNS.

The Twelve Signs of the Zodiac.

♈ Aries	♌ Leo	♐ Sagittarius
♉ Taurus	♍ Virgo	♑ Capricorn
♊ Gemini	♎ Libra	♒ Aquarius
♋ Cancer	♏ Scorpio	♓ Pisces

The Nine Planets.

♄ Saturnus	☿ Mercurius	⚵ Juno
♃ Jupiter	♅ Georgium Sidus.	⚶ Vesta
♂ Mars	⚳ Ceres	☉ Sun
⊕ Earth	⚴ Pallas	☽ Moon
♀ Venus		

Seven of the Planets sometimes imply the seven days of the week.

Dies Solis, Sunday	*Dies Mercurii*, Wednesday
Dies Lunæ, Monday	*Dies Jovis*, Thursday
Dies Martis, Tuesday	*Dies Veneris*, Friday

Dies Saturni, Saturday

☊ The Dragon's Head, or ascending node, and ☋ The Dragon's Tail, or descending node, are the two points in which the eclipses happen.

The Aspects.

☌ Conjunctio; happens when two planets stand under each other in the same sign and degree.

☍ Oppositio; happens when two planets stand diametrically opposite each other.

△ Trigonus; happens when one planet stands from another four signs, or 120 degrees; which make one third part of the ecliptic.

□ Quadril; happens when two planets stand three signs from each other, which make 90 degrees, or the fourth part of the ecliptic.

⚹ Sextil; is the sixth part of the ecliptic, which is two signs, and make 60 degrees.

🌑 New Moon.
☽ First quarter of the Moon.
● Full Moon.
☾ Last quarter.

Many are the signs and symbols which astronomers have invented to impose upon the credulity of the vulgar, who are the chief supporters of almanacks; and especially of such as abound in predictions of any kind: among which we reckon those signs which give notice, on what day it is proper to let blood; to bathe and to cup; to sow and to plant; to take physic; to have one's hair cut; to cut one's nails; to wean children; and many other alike nonsensical observations, to which the lower class of people are particularly bigotted; besides giving credit to the marks that serve to indicate hail, thunder, lightning, or any occult phænomena.

PHYSICAL SIGNS AND ABBREVIATIONS.

℞ Stands for *Recipe*, or Take.
ā, aa, of each a like quantity.
℔ a pound.
℥ an ounce.
ʒ a drachm.
℈ a scruple.
j stands for one; ij for 2; and so on.
ß signifies *semi*, or half.
gr. denotes a grain.
One pound makes 12 ounces.
One ounce contains 8 drachms.
One drachm is equal to 3 scruples.
One scruple consists of 20 grains.
One grain has the weight of a barley-corn.

P. stands for *particula*, a little part, and means so much as can be taken betwixt the ends of two fingers.

P. æq. stands for, *partes æquales*, or equal parts.
q. s. *quantum sufficit*, or as much as is sufficient.
q. p. *quantum placit*, or as much as you please.
s. a. *secundem artem*, or according to art.

MUSICAL CHARACTERS.

TUNE and Time are the two chief characteristics of musical notes. In time, the distinction, measure, and proportion of notes and rests are to be observed.

As to distinction, they have different characters; and different names with relation to time.

The rests or pauses are of the same length or quantity with the notes that stand above them: as follow—

Treble, or G Clef; the line passing through the middle of the curve is called G, and the other letters are calculated therefrom. This Clef is usually placed upon the second line, though it sometimes appears upon the lowest.

Tenor, or C Clef; the line passing through the body is called C; it is commonly placed upon the lowest, the second, the middle, or the fourth line.

Base, or F Clef; the line passing between the points is called F; it is generally set upon the fourth line, but sometimes it occurs upon the middle one.

Slow Time, or Binary Measure; it is counted by beating twice up and twice down in each bar. A bar most commonly contains four crotchets, or their value.

Moderate quick Time, or the Second Mood; it is counted either by four quick beats, or two moderate in a bar. This character reversed signifies the quickest time, which is counted by two beats in a bar.

Semibreve; this is the longest note in modern music, and is equal to two Minims, in the time of playing or singing.

Minim; equal to two Crotchets.

Crotchet; equal to two Quavers.

Quaver; equal to two Semiquavers.

Semiquaver; equal to two Demisemiquavers.

Demisemiquaver; thirty-two of which are equal to one Semibreve. This is the shortest note in modern music.

Rests.

To each of the Notes there belongs a corresponding mark of silence, called a Rest; which signifies that silence is to be kept, so long as that note which it represents would require to be sung or played. The rests are here shewn by themselves, but in the next page they are connected with their respective names and notes.

Direct.

Repeat.

Natural.

Flat.

Sharp.

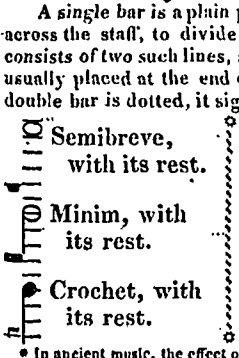
Slurs.

A sharp (♯ or 𝄯), at the beginning of a line, denotes that all the notes in that line are to be taken a semitone higher than in the natural series; and the same affects all the octaves above or below, though not marked; but when prefixed to any particular note, it shews that note alone to be taken a semitone higher than it would be without such character.

A flat note (♭ or 𝄬), this is contrary to the above, that is, a semitone lower.

When a natural note (♮ or 𝄮), in a line or a series of artificial notes, marked at the beginning ♭ or ♯ happens to be required, it is denoted by this character.*

A *single* bar is a plain perpendicular line drawn across the staff, to divide the tune. A double bar consists of two such lines, somewhat thicker, and is usually placed at the end of the piece. When the double bar is dotted, it signifies Repeat.


Semibreve, with its rest.
Minim, with its rest.
Crochet, with its rest.
Quaver, with its rest.
Semiquaver, with its rest.
Demisemiquaver with its rest.

* In ancient music, the effect of the sharp was counteracted by the flat, and the flat by the sharp.

N.B. In the distribution of musical characters, care ought to be taken to save the edges of the traversing lines from being battered

AMES OF NORFOLK.

ARMS:—*Argent, a Boar's head couped, between three cross-croslets, Sable.*

CREST.—*On a wreath, a Stag's head gorged with a wreath Argent and Sable; tied, and the ends hanging down at the back of the neck.*

LAUNCELOT AMES, or AYMAS, a native of Norwich.

JOHN, born in the parish of St. Peter Mancroft, in Norwich, March 3, 1576; died April 17, 1647, aged 71.

- Benjamin, died May 8, 1647.
- John.
- Margaret, daughter of ..... Missing, of ..... born at Norwich, July 4, 1617; married May 5, 1641; died at North Yarmouth, July 19, 1657. 1st wife.
- Joseph, born at Great Yarmouth, March 5, 1619; a Captain in the Parliamentary Navy, which he left about 1673, and retired to Great Yarmouth, at which place he died, Dec. 1, 1625, aged 76.
- Ruth, daughter of William Bridges, of ...., and relict of ..... Hardingham, of ..... baptized in Yarmouth, June 6, 1622, married May 22, 1661. 2d wife.
  - Five children by the first husband.

The first part of this Pedigree is composed with the characters usually cast for genealogical tables; the second portion is executed with flowers, in order that our readers may have an opportunity of judging whether the latter are not best adapted for this purpose.

1. Haney, born at Yarmouth July 5, 1613.

2. Joseph, born at Yarmouth Sept. 25, 1641; ob. July 16, 1646.

3. Benjamin, born Jan. 22, 1645, drowned Sept. 1695.

4. Joseph, born July 1647; ob. in London, buried at White-chapel.

5. Abigail, born Feb. 6, 1648.

6. John, born at Yarmouth, April 5, 1651; removed to Wapping near London, circ. 1699; ob. 1700, buried at Wapping Chapel.

= Esther, daughter of ..... Goodall of ..... married at Yarmouth, Sep. 1676; ob. 1712; buried at Wapping Chapel.

A daughter, who died two days after her birth, ... 1661.

James.

7. Nathaniel, born Aug. 26, 1652.

8. Samuel, born Nov. 25, 1653.

9. Mary.

10. Esther, born March 15, 1655.

JOSEPH AMES, F.R.S. and F.A.S. Author of the Typographical Antiquities, published 1749; born at Yarmouth, Jan. 23, 1688-9. Appointed Secretary to the Antiquarian Society 1741: died suddenly in a coughing-fit, at London, Oct. 7, 1759; buried at St. George's in the East, aged 71.

= Mary, daughter of William Wrayford, a merchant of London, married at the Church of St. Mary Aldermary, April 12, 1711. Ob. Aug. 12, 1734.

Eight other children, of whom seven died under the age of two years.

Five children, who died before their mother.

Mary, born Nov. 21, 17.. ...

= Edward Dampier, Commander of the Sea-Horse East-Indiaman, which he left in 1772, and was appointed Deputy Surveyor of Shipping to the Hon. East-India Company, resigned his situation April 22, 1795.

MARKS AND CHARACTERS USED IN DOMESDAY BOOK AND OTHER ANCIENT RECORDS.

It is an improvement of latter years only, to have type cast to resemble the abbreviations used in the more ancient manuscripts; they being formerly rudely imitated, either from a common fount, or else were cut in wood for the purposes of any particular work. The first punches for the Domesday letters were made by Mr. Thomas Cottrell, in facsimile of the original writing; but this plan was afterwards resigned, and gave place to the improved characters cut by Mr. Joseph Jackson, which were first used in 1783 for the edition of the Domesday Book, which occupied ten years in printing, in two vols. folio, at the press of Mr. Nichols, the types for which were destroyed by fire in 1808. Previous to their destruction, however, they were used in Kelham's Introduction and Glossary to that Record. In 1800 an improved fount of Small Pica, and in 1805 a new Pica, of the modern Domesday characters now in use, were cut and cast by Mr. Figgins, (apprentice and successor of the aforesaid Mr. Jackson) for Messrs. Eyre and Strahan, his Majesty's printers, expressly for the purpose of printing the splendid and valuable publications of the Commission of Enquiry into the State of the Records of the Kingdom. * It is also an improvement, which seems a natural consequence of the former, that in most of the modern topographical works, the extracts from Domesday and the various ancient Charters, which are referred to, are printed with similar characters, and contractions; and in composing these a knowledge of their nature and use is evi-

* In the years 1807 and 1808, three new founts of Domesday characters were cut by Mr. Figgins (viz. Pica, Long Primer, and Brevier) for his Majesty's printers in Scotland, for the purpose of printing the Records of that portion of the Empire.

dently of the greatest importance. For this purpose, we have procured all the ancient characters now in existence which have hitherto been cast, and some we have had purposely engraved on blank metal shafts, in order to make our collection more complete. At the same time we do do not presume to offer the following series as a perfect list of Record abbreviations, but the reader will also remember that it is *entirely a new feature* in a typographical work, that even from the following a general idea of ancient contractions will be given to the young Compositor, and that if our production be not entitled to praise, we shall at least deserve it for our intentions.

It is hardly requisite to state that some knowledge of the Latin, Saxon, and Norman-French languages, are requisite to give even a guess at some abbreviated words; as otherwise they are frequently unintelligible; thus, *Chr*, is put for *Chevalier Knight*, which would certainly remain incomprehensible if the language were not known; in the instance of Latin, it is next to impossible to understand the passage if this be the case; as a wrong termination of a word will frequently alter the sense of a whole paragraph. Practice and attention are the only means of arriving at perfection in this art; for no rules will generally apply, as abbreviations varied considerably at particular periods; we have however collected the following, and now offer them not as perfect guides, but only as indicators of the way. For the convenience of reference we have placed the characters in the margin, and have arranged them all in alphabetical order: after each article we have also stated whether it is peculiar to Domesday, or whether it is an abbreviation common to Charters or other Records:—

Ā { In Domesday this mark occurs over an Italic A, for the termination *am*, as Pagenham. The Roman letter is found in the Colophon of Domesday, with the same signification.

ā ã { A line placed over a letter, usually signifies an abbreviation of the word in which the letter occurs; and it is evident that for this no regular rule can be given. Thus *aālia*, signifies *animalia*, usually in records translated *black cattle*. Sometimes the line was placed over an *a* at the end of a word, when it frequently stood for the Latin termination *am*, (1 declension accus. case sing.) as *aulā*, for *aulam*, a hall: *trā*, for *terram*, arable land. [Gen. abbreviation.

à } A Domesday character, signifying of, or belonging to.

B̈ f ☙ { *Frank-berewic*, (Saxon) *a town, manor, village, court*, or *borough, free* from all services except homage: the term is occasionally marked thus, F. B. The word *berewic* is sometimes expressed by the *B* only, without the sign. [Domesday.

ƀ { *Beria*, or *bere*, (Saxon) *a town, manor, village*, or *court*. [Domesday.

ƀƀ { A mark equal to *B̈*, signifying either *two berewics*, or *two persons holding the same*. [Domesday and general abbreviation, when occuring in a word.

ƀ { An abbreviation for any part of a word, as *libi hōes*, for *liberi homines*, or free-men. [General abbreviation.

c̃ { *Cum*, with, (Domesday) also a final abbreviation, as *diac.* for *diacones*, deacons: also a gen. abbrev.

c̄ { Initial abbreviation for *con*, as *c̄tª* for *contra*, against, for which purpose a capital C, with a similar mark above it, was often used. Sometimes a final contraction, as *tc̄* for *tunc*, then; or *ct*, as in *predictos*, aforesaid. [Domesday.

ꝯ { Used for *cer*, in *fecerint*, in the hundred and Quo-Warranto Rolls of Edw. I.

ꝯ { Abbreviation for *cion*, as in *porcionibus*, &c. [Domesday and general abbreviation.

c̋	A character used in Domesday for the letters *cra*, *cræ*, as *acra*, or *acræ*.
ꝯ	Initial syllable *con*, as in *consuetudor* custom. [Domesday.
D þ	Saxon *Th*. (Domesday.
đ	Usually put in Domesday for *dimidiatus*, half.
đ	In Domesday for *de*, of;—also an abbreviation for *dedit*, he gave; and otherwise generally used.
ꝺ	Sometimes used in Domesday as a numeral for 5.
Ē ẽ	Sometimes put in the Hundred-Rolls, for the terminations *en* or *em*.
e ẽ ꝫ	*Est*, is, or *esse*, to be. In some instances in Domesday the mark is put above the letter, as in the word *esse*, of which the first and last letters only are given,
ē ~ ꝫ	*Est*, is, (Domesday) also a general abbreviation, to fill up the remaining space when only a few of the letters are wanting; in most records it is entirely arbitrary.
7 7	*Et*, and, [Domesday.
f	This sign appears in the Inquisitiones Nonarum, for *fes*, as in *post festum*, after the feast.
g̃ ꝯ g	These letters frequently occur in the Inquisitions and Parliament-Rolls, for *gis*, in Magistro, and Regis.
ħb	A contraction placed for *habebat*, had.

ħ ħd — This mark is sometimes put over an Italic capital *H*, to signify hundreda. This word, however, is mostly written thus, *HVND*. in italic capitals, and the mark above the single capital also signifies *hoc*, *huic*, &c. this or that. The small letter is a general abbreviation, and is often used with a *t*, to signify *habet*, he has.

Ī. — A common initial abbreviation to signify *in*, or *item*, also; sometimes, however, it is placed with a *d* for the word *idem*, the same.

ĩ — *in*, Statuta Wallie of Edw. I.

ī — General abbreviation, varying at different periods.

ȳ ỹ — These characters occur for *ij*, as in *Subsidij*, subsidies, in the Inquisitiones Nonarum.

ƙ — A sign placed in the margin of Domesday-book, for the word *clamores*, to shew that the land mentioned in the text was claimed by another. Also a general abbreviation in Charters.

ŧ — When followed by *ra*, it signifies *litera*, a letter. It is also generally used in various parts of words.

ħħ — A double character of the same description as the last: it is sometimes used thus, *mill.* for *millesimo*, a thousand.

M̃ m̃ — This character occurs in Domesday with a capital H after it, to signify *Manerium hoc*, this manor.

Ṁ — Usually placed in Domesday for the word *modo*, now. It has been supposed by some to signify *mancrio;* but if it be at all used with this signification, its occurrence is very rare.

m̄ — Used for *mer*, in the Quo-Warranto Rolls of Edw. I.

m̄ — Generally put for *mnes*, as in *omnes*, all.

m̃ — Commonly used for *men*, as in *emendare*, to amend.

Manerium, a Manor, for which word, a Roman M, with a line above it, is occasionally placed. A Roman numeral is often set above, to shew the number of manors referred to. [Domesday. This letter is also used in Domesday for the numeral of *millesimo*, a thousand.

This letter occurs in the Colophon of Domesday, as an initial character only, in word *millesimo*.

General abbreviation; it appears for *ner*, in *generalis*.

Non, not: also a general abbreviation.

Nunc, now: General Records.

nt, termination, as in *sunt*, they are. [Domesday.

or, as in *uxoris*, of a wife. [General abbreviation.

In the Inquisitiones Nonarum, the latter of these characters is used for *ion*, as in *oblationes*. The other letter is a general abbreviation.

Pro, for. [Domesday and General Records.

Pra, as in *pratum*, a meadow: vide *Exsessa*, i. e. Essex, in Domesday.

A general record character, used for the syllable *prə*.

Sometimes for *pra*, as in *pratum*, a meadow: sometimes the character is put for *pre*, as in *prebendæ*, the prebendaries. [Domesday and General Records. In the abbreviation of the Original Rolls, the letter with the waved line is placed for *pur*, in *purpresturis*.

ꝑ, ꝓ — *Par*, as in *parcus*, a park, (Domesday)—also *per*, by: (general abbreviation.) Sometimes used for a Greek ρ, in the name of Christ. [Domesday.

℣ — Reference marks for a new paragraph, in the place of ¶, which came into use in manuscripts about the fourteenth century. [Domesday.

T·, K — These figures are sometimes used in Domesday in the manner of crotchets [, to convey a part of a passage above the line, but at the same time to shew its connection with the foregoing.

Qꝯ — Usually placed with a *d.* to signify *quando*, when. [Domesday.

q̃ — Used in the Testa de Nevill for *qua*, *qui*, and sometimes for *qu* only.

qꝰ — Final Latin syllable *que*, as in *usque*, until, (Domesday, also used in MSS. and old printed books.

q — A Domesday contraction for *quan*, as in *aliquantum*, a very little.

ꝗ — Most commonly placed for *quam*, whom.

q̃̃, q̃̃ — Used for any case of *qui*, who.

ꝗꝗ — *Quisquis*, or *quicquid*, whosoever.

q̃́, q̊ — A Domesday contraction put for *quæ*, which, and *quoque*, also.

ꝙ, q — A Domesday contraction for the word *qui*, who or which; *qu* is also intimated by placing " over the former letter, but these marks sometimes stand for *ra* in *pratum*, a meadow.

ꝺ — A Saxon character, used for the word *quod*, that.

ꝛ, r̃ — A Domesday character; signifying *Requiritur*; denoting that the article against which it was placed required to be looked at again. In the Inquisitiones Nonarum it is placed for *Regis*, of the King. The small letter is sometimes used for the purpose, but is usually a general abbreviation.

A capital R is sometimes used in the Parliament Rolls for *Rex*.

ꝝ, ꝝ — The final syllable *rum*, as in *Cartarum*, of the Charters. The latter one is also used in Domesday wtih a *q*, for *quarentina*, a furlong. In the Inquisitiones Nonarum it sometimes stands for the terminations *is* or *us*.

s̃, ſ — These letters appear in the Testa de Neville, for *ser*, in the words *servicium*, *serjantia*, &c.

ꝑ — *Secundum*, accordingly; it also appears in the 2d Stat. Westm. for *souverain* and *seigneur*.

ꝰ — In the Inquisitiones Nonarum placed for *us*.

ꝺ — *Sanctus*, Saint. [Domesday.

t̃ — *tem*, in *Item*. Also of general use.

ꝛ, ꝛ — *Et*, and. General Records.

ꝛ — *ter*, as in *tertius*, the third. In the Testa de Nevill it also appears for *tra*. [General Records.

ꝶ — TR initial, as in *Trinitas*. [Domesday.

ů — Sometimes *valuit*, and sometimes *virga*. (Domesday.

ṅ — Another character for the above *u*, which frequently occurs in Ancient Records.

ū — In the Testa de Nevill, this abbreviation is put for the final syllable *um*.

ũ — General abbreviation, as in *ual*, for *valuit*; *ous*; for *oves*, sheeps. (Domesday).

ꝰ — Used for the terminations *us* and *er*, in the Hundred Rolls of Edward I.

ꝯ — A Domesday sign usually placed after a *t*, to signify the termination *ur*, as in the word *testificatur*.

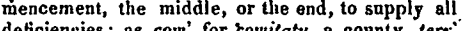
ʒ — The first of these marks, is in a single instance, in Domesday, used for *er*, in *per*.

ꝗ ꝯ	Characters used in Domesday and other Records for the Latin termination *us*, as in *tocius*, the whole. The last mark is also used after *scil.* for the word *scilicet*, namely.
V̄	This line is more commonly to be found in Domesday placed over an Italic *V*, in which case it stands for the termination *um*. as in *burgum*. It has, however, the same signification, whether placed over a Roman or an Italic letter.
ꝉ ꝛ	*Vel*, or. [Domesday.
ꝺ	Final syllable *ver*, as in *geldaver*, (Saxon): geld-money. This character is also used for the termination *ns*, as in Serviens [Domesday.
ṽ	Usually placed in Domesday to signify a *virgate* of land, *i.e.* from 15—30 acres. It is used in other Records as a general abbreviation. In the Testa de Nevill it is put for *ver*, in *averagia*. It generally stands for *ve*.
ꝟ	Also used for *ver*, as in *subvertunt*, in the Quo Warranto Rolls of Edward I.
v̊	*vero*, but. [Domesday.
w̃	Used in Parliament Rolls of Edward III. for *wo*, in Ellesworth.
XX	Placed over the top of any number, signify so many scores.
x̃	Commonly used in the Testa de Nevill for *xandr*, in *Alexandro*. It is, however, put for *er*, in the same Record. In the abbreviations of the Original Rolls, it stands for *xor*, in *uxoris*.
ꝫ	This sign occurs in the Placita Rolls of Henry III. for the termination of *uxoris*, of a wife. (3 Declens. Gen. Case Singular.
ẏ	A Saxon *y* used, in Domesday, especially in Grentebresire, or Cambridgeshire; as Elẏ for Ehi.
z z̃	Used for *ts*, in the Stat. Westm. 3d of Edwd. I. as in the word *erraunts*.
ꝯ	A sign used in the Testa de Nevill, with a contracted *tra*, to signify &c.

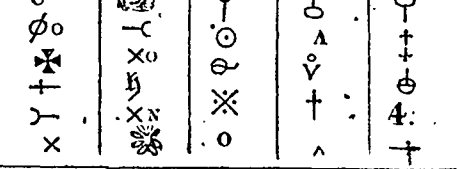
& { *Et*, and—with the line it signifies *etiam*, also. This character is likewise used without the line, for the termination *et*, as in *pertinet*, belonging to. General Records.

; { A mark usually placed in Domesday immediately before a sum of money, which may be considered as equal to a semicolon; as *De Silua* xxx. den. From the woods thirty pence.

Besides these letters and signs, there are other characters used in printing the ancient Records, which it is impossible either to reduce to any system of classification, or to give any particular rules for understanding. Thus it is frequently the case where the letters of a word are not marked with an abbreviation, that a comma is placed either at the commencement, the middle, or the end, to supply all deficiencies; as *com'* for *comitatu*, a county, *terr'* for *terra*, arable land, &c. Other signs of abbreviation to which no particular meaning can be applied, are the following,—



which are peculiar to the Domesday, where they are commonly placed at the end of various words, by the former letters of which, together with the context, we can alone learn how the vacancy should be supplied. Domesday has also the following series of marginal references for passages omitted or afterwards added, and these in most instances explain themselves—



But it would require a Dictionary of no trivial extent, to be a complete guide to the reading of that ancient Record, as the contractions often change with every County. Indeed, in a work of this nature it would be almost useless, could a complete series of all these abbreviations be given; but we may hope, from the foregoing hints, that a work which would evidently be of such extensive utility, may one day be given to the world. In the interim, the best improvement of the above Record elucidations, will be to give a specimen of the Domesday Book in its original abbreviated character; next, the extended Latin reading, with the additional letters printed in italics; and lastly a perfect translation of the whole. The abbreviated text that follows, is from Mr. Jackson's types which were cut for Mr. Nichol's edition of Domesday.

Robt ten de ead *Herpere*. Aluuard tenuit T.R.E. 7 geldb p. III. hid. Tra. ē. III. car. In dnio. ē. I. car 7 dimd. 7 III. serui. 7 II. cotcez. Ibi molin redd. XX. denar. 7 IX. acp ti. 7 IIII. q̄ pasturæ. 7 I. q̄ siluæ. 7 un burgs redd. VIII. denar. Valuit. C. solid. Modo. IIII. lib.

Vide Dorsete, Vol. I, Page 81a, Col. I.

Robertus tenet de eadem HERPERE. Alward tenuit *Tempore Regis Edwardi* et geldabat *pro tribus* hidis. Terra est trium carucaturum. In dominio est una carucata et dimidiata et *tres* servi et *duo cotarii*. Ibi molindinum reddit *viginti* denarios, et *novem* acræ prati, et *quatuor quarentin* pasturæ et *una quarentina* silvæ, et unum burgensis reddens *octo* denarios. Valuit *centum* sblidos modo *quatuor* libras.

TRANSLATION.

Robert holds of the same, HERPERE; [i. e. Harpur-lane], Alward held it in the time of King Edward, and it is taxed for three hides. There is arable land for three ploughs. There is in the Lordship one plough and a half, and three bondmen, and two Cotters. The mill pays twenty pence; and there are nine acres of meadow, and four quarentines of pasture, and one quarentine of wood; and one burgess pays eight pence. It was valued at one hundred shillings, now four pounds.

An idea of the nature of other Records may be ascertained by the following short extract, from the first Report on the Public Records of the Kingdom, Folio, 1801. Tab. VII.

Oibꝫ xpi fidelibus hoc scriptū visurꝰ uel auditurꝰ Willi de Hotot de Woldwestoñ Salutē.

Chart. 1 Edw. III. in the Augmentation Office.

EXTENDED LATIN READING.

Omnibus Christi fidelibus, hoc scriptum *visuris* vel auditu*ris*, Willi*elmus* de Hotot de Woldweston, Salutem.

TRANSLATION.

To all the faithful in Christ, who shall see or hear of this writing, William de Hotot of Woldweston, sends greeting.

The authorities which we have consulted for the foregoing explanations, have been the printed copy of Domesday already mentioned, Kelham's Domesday Book illustrated, the Reports on the Records of the Kingdom, and the excellent General Introduction to Domesday, by H. Ellis, Esq. of the British Museum.

CHAP. XI.

HEBREW.

"WHATEVER disputes may have arisen among the learned, respecting the antiquity of the Hebrew alphabet, or the manner of writing it, little doubt appears to have been entertained of the antiquity of the language itself. The writings of Moses, and the book of Job, are undoubtedly the most ancient compositions acknowledged in Europe. Both these works exhibit a language arrived at a great degree of perfection, and which must have been in use, as a written, as well as an oral tongue, long before these writings were published, or it would have been useless to have written where none could read.*

"Besides a great number of words in the Greek, Arabic, and Celtic, which appear to have been derived from the Hebrew, the very structure of the language points it out as an original one.

"The radical words very uniformly consist of two or *three* letters, and the derivatives branch out from them in a manner best calculated to produce precision, and conciseness of expression.

* Astle on the Origin and Progress of Writing, p. 12.

"The question respecting the original Hebrew characters has undergone abundance of discussion, from the times of the first fathers of the Christian church, down to this day. Origen and Jerom, on the authority of the old Rabbis; and among the moderns, Scaliger, Montfaucon, Chishull, and Dr. Sharpe in his treatise on this subject; contend, that the Samaritan was the original Hebrew character, and that the present alphabet was invented after the captivity.

"Origen speaks to this effect: In the more accurate copies of the Old Testament, he says, the sacred name of Jehovah is actually written, but in the *ancient* Hebrew letters, and not in those in use at present, which Esdras is said to have introduced after the captivity.

"St. Jerom, in his preface to the books of Kings, puts this matter in a still stronger light: he says, the Samaritans often copy the five books of Moses, in the same number of letters as the Jews do; but their letters differ in form, and the use of points: for it is certain that Esdras, the scribe and a teacher of the law, after the taking of Jerusalem, and the restoration of the temple under Zorobabel, invented those

other letters which we now use; whereas, before that time, the letters of the Samaritans and Hebrews were the same.

"From these passages of Origen and Jerom we may very certainly conclude, that this was the opinion of the ancient Rabbis and Jewish doctors: but it is very singular and worthy of notice, that Origen says, that even in his time, the sacred name, in the more accurate copies of the Bible used by the Jews themselves, was written in the ancient or Samaritan, not in the Hebrew or modern alphabet; for both Esdras and the other rulers of the synagogue, who patronized the use of the new characters, believed themselves conscientiously bound to preserve the name of Jehovah in the same letters in which they first received it.

"In support of the opposite opinion, the modern Rabbis, the two Buxtorfs, Wasmuth, Schickard, Lightfoot, and P. Allix, (Spanh. p. 69), &c. contend that the alphabet now in use among the Jews, is the same that the Law and Old Testament were originally written in from the time of Moses.

"Having stated the nature of the dispute, and some of the principal authors

on both sides of the question, we think it right to remind our readers, that it is no part of this work to enter minutely into controversies of this kind.*"

THE HEBREW ALPHABET.

		No. 1	No. 2.	Numerical value.
Aleph	א	Sounded as a in war, [vowel]	A gentle aspirate	1
Beth	ב		Ba	2
Gimel	ג	g hard.	Ga	3
Daleth	ד		Da	4
He	ה	a in Ante. [vowel]	A rough aspirate	5
Vau	ו	u vowel, or before a vowel, w		6
Zain	ז		Da	7
Cheth	ח		Ha	8
Teth	ט	Ta		9
Jod	י	Like ee in English. [vowel]	i consonant, or the letter y	10
Caph	כ ך	k or c hard		20
Lamed	ל			30
Mem	מ ם			40
Nun	נ ן			50
Sameech	ס		Soft s	60
Ain*	ע	o long. [o vowel]	Ag, or Aga, the roughest aspirate	70
Phe	פ ף			80
Tzaddi	צ ץ	z soft		90
Koph	ק	q, or qu		100
Resch	ר			200
Shin	ש or Sin			300
Thau	ת		s hard	400

Final Letters.

* Fry's Pantographia.

In the column, No. 1, of the foregoing table, the force of the Hebrew letters, when read without points, is expressed; and the next column, No. 2, gives you their force when the language is complicated with the Masoretic points or vowels, which are certainly of later date than the present Hebrew letters.

Beth	Caph	Gimel	Nun
ב	כ	ג	נ
Daleth	Caph	Resch	He	Cheth	Thau
ד	ך	ר	ה	ח	ת
Vau	Zain.	Jod	Nun	Teth	Mem
ו	ז	י	ן	ט	ם
Mem	Samech	Ain	Tzaddi
מ	ס	ע	צ

The following five letters are cast broad, and are used at the end of words, viz.

Aleph	He	Lamed	Mem	Thau
א	ה	ל	ם	ת

but are not counted among the final letters, being contrived for justifying, because Hebrew is not divided.

Although the vowel points, in the opinion of the best scholars, are not essential to the language, yet as they are still used in some Bibles, and in all works published by Jews, it will be necessary for a compositor to attend to them.

The Masoretic vowels or points are such as are here subjoined, under the consonant ב, or beth.

1. *The long Vowels.*

Their names are—

Kametz	ָ *aa*	.. בָ	baa
Tzeri	ֵ *ee*	.. בֵ	bee
Long Chirek	ִי *ii*	.. בִי	bii
Cholem	וֹ *oo*	בוֹ	boo
Shurek	וּ *uu*	.. בוּ	buu

2. *The Short.*

Patach	ַ *a*	.... בַ	ba
Sœgol	ֶ *e*	.... בֶ	be
Little Chirek....	ִ *i*	.... בִ	bi
Kametz-chatuph	ָ *o*	.... בָ	bo
Kibbutz	ֻ *u*	.... בֻ	bu

3. *Shevas, which imply a Vowel to be wanting.*

Simple Sheva.....	בְּ
Patach furtive	בַּ
Chateph Patach	בֲ *a*
Chateph Sœgol	בֱ *e*
Chateph Kametz	בֳ *o*

The three last are called compound shevas; and in fact we see that they are

only the short vowels, to which the simple sheva (:) is joined.

The best idea we can give of these shevas, is in the English words *ev'ry* and *indignant*. Between the *ev-* and *-ry* there is a kind of semi-sound of *e;* and between the *indig-* and the *-nant* there is a similar sound, as if the word was *indigenant*. These semi-sounds the Hebrews would call shevas.

Dagesch (·) and mappik (·) are two points placed in the body of certain letters.

The dagesch is either *forte* or *lene*.

Dagesch forte may have a place in all the letters except ר ע ח ה א, and it makes the letter sound double.

Dagesch lene has its place in ב ג ד כ פ ת, and raises the sound of the letter.

Mappik has its place in the letters *he* and *jod*.

Raphe is a short dash that heretofore was put over ב ג ד כ פ ת when they had no dagesch, to shew that they should be pronounced soft, and with the aspiration of an h.

Maccaph — is used to connect words together, which is common in Hebrew, as *e. g.* עם־אדני

Soph-Pasak is the name of the two

great points [:], which stand at the end of each verse in the Hebrew Bible.

Besides the vowels, the Hebrews have various accents, of which some have their place over, and some under, the letter. They are not used in all Hebrew writings: but only in some books of the Bible, where they stand for notes to sing by, and are therefore called *accentus tonici*.—Others, again, are named *accentus distinctivi*, because they distinguish the sense, as pointing does in the English; and others have the appellation of *ministri*, or *servi non distinctivi*, which shews the construction and connexion of words. The figures, names, and signification, of the accents that stand over the letters, are as follow, viz.

Segol, or Segolta..	֒	Strong colon
Sakeph katon....	֍	Comma
Sakeph gadol....	֎	Ditto
Refia, or Rbhia...	֑	Ditto
Sarka	֓	Semicomma primum
Pasta.....	֔	Ditto
Geresch.....	֜	Semicomma secundum
Geraschajim.....	֝	Ditto
Telischa Gedola..	֟	Semicomma tertium
Paser minor.....	֠	Semicomma quartum
Paser major.....	֡	Ditto
Karne para.....	֢	Ditto

Schalscheleth..... ; Semicolon
Pesik, or legarme. , Ditto
Kadmha..... ; Semicolan
Telischa ketanna.. ; Ditto

The following accents have their place under the letters; viz.

Silluk..... , Punctum
Atnach..... : Colon
Tiphcha..... ; Semicomma primum
Tefir..... , Ditto
Jethif..... ; Semicolon
Munach..... , Semicomma
Merca simplex... ; Ditto
Merca duplex.... ; Ditto
Mahpach..... ; Ditto
Darga..... ; Ditto
Meajela..... ; Ditto
Jerach ben jomo.. , Ditto

The Hebrew has no capitals; and therefore letters of the same shape, but of a large body, are used at the beginning of chapters, and other parts of Hebrew works.

Still, however, we must not pronounce it a fault, if we happen to meet in some Bibles with words that begin with a letter of a much larger body than the text; nor need we be astonished to see words with letters in them of a much less body;

or wonder to see final letters used in the middle of words; for such notes shew that they contain some particular and mystical meaning. Thus in 1 Chron. i. 1, the word Adam (אָדָם) begins with a letter of a larger size than the rest, thereby to intimate, that Adam is the father of all mankind. In Genes. i. 1, the great beth in the word Bereschith (בְּרֵאשִׁית) stands for a monitor of the great and incomprehensible work of creation. Contrary to the first, in Prov. xxviii. 17, the daleth in the word Adam, (אָדָם) is considerably less than the letter of the text, to signify, that whoever oppresses another openly or clandestinely, though of a mean condition, or who sheds innocent blood, is not worthy to be called man.

Sometimes the open or common mem stands in the room of a final one; as in Nehem. ii. 13, where the word Hem has an open mem at the end, thus, (הֵם) in allusion to the torn and open walls of Jerusalem, of which there is mention made; and in Isa. vii. 14, where the prophet speaks of the conception of the Virgin Mary, the mem in the haalma, (הָעַלְמָה) or virgin, is a close or final letter, to imitate

the virginity of the mother of our Saviour. Such are the peculiarities of some Jewish Rabbis, in Bibles of their publication; of which we have instanced the above, to caution compositors not to take them for faults, if such mystical writings should come under their hands.

For the rest, Hebrew reads from the right to the left, like all other oriental languages, except the Æthiopic and Armenian. In composing Hebrew, therefore, the Jews begin at the end of the composing stick, and justify the vowels and accents over and under the letters after the line of matter is adjusted. But points serving often to make the sense of a word ambiguous, they are seldom used in any other than theological and grammatical writings.*

The Hebrew, like the Greek, has more

* The text of the sacred books was originally written without any breaks, or divisions into chapters or verses, or even into words; so that a whole book, in the ancient manner, was but one continued word. Of this kind we have still several ancient manuscripts, both Greek and Latin. From the confused manner just adverted to, which the ancients had of writing their books, arose in a great measure that multiplicity of what are termed *edriæ lectiones* with which the moderns have found the old writings encumbered. To prevent the further accumulation of errors in the books of Holy Writ, the Jews, it is said, of a famous school at Tiberias, invented about A. D. 500, what are called *the Masoretic points*, which are the same with those we have noticed in the preceding part of this article.

sorts than are required in a complete fount; which renders it difficult to make room for them in cases of common dimensions; considering that the powers of the Hebrew alphabet are distinguished by points that letters have either in their body or over it. Accordingly, we observe in some founts the dagesch forte to have a place in all the letters of the alphabet, though it is not admitted into five of them. The second series is the whole alphabet, with a cholem over each letter; and a third alphabet has the dagesch in the body, and the cholem on the top. Exclusive of which treble alphabet, some founders cast a fourth, that is kerned on both sides, and makes the alphabet with a cholem needless, because by the help of the kerned alphabet not only the cholem, but even the vowels, may be made to stand in their proper places, provided they are cast after the manner of Greek accents, thin, and inclining towards the middle of the foot of the letters.*

* With respect to the use of points, Smith thus observes: "That Hebrew being a sacred language, is chiefly studied by Divines, who often make use of points in theological writings; though plain Hebrew as well as Greek, are understood and very frequently printed without points or accents. But that the use of such pedagogic symbols will one time cease, is the hope of all that delight in beholding neat letter disrobed of all intruders upon its native beauty."

HEBREW UPPER CASE.

א	ב	ג	ד	ה	ו	ז	ח	ט
י	כ	ל	מ	נ	ס	ע	פ	צ
ק	ר	ש	ת	ך	ם	ן	ף	ץ

Hebrew Lower Case.

4-m quads.	׳	׳׳	׳	׳	׳	ה	ש				ך	ץ	ף
3-m quads.	׃	ה		ד		׃		נ	ג	ז	ח	ם	ק
2-m quads.						כ	ש						
1-m quads.	׀	ל		מ		י	ב	ס	ע	פ	צ	n Quadrats.	m Quadrats.
n quad.						Hair Spaces							
Hair Spaces	׀	ת		ו		Spaces.	א	ר		ם	׀	Quadrats	
Spaces										׃	׃		

N. B. The boxes on the left hand side of this case contain spaces and quadrats for justifying the points.

* Query!—Would it not be more convenient to compositors in general, if the Hebrew lower case were laid as near as possible to the English method; this plan has been adopted by some compositors, who have acknowledged the great advantages resulting from such an arrangement. We had an idea of giving the scheme of such a case, but, upon mature deliberation, it was considered unnecessary.

Common Hebrew Case.

ר	ס	ן	ף	ץ	א	ה	ל	ם	ת
א	ב	ד	ה	ו	ח		ג	ז	ט
י	כ	ל	מ	נ	ס		פ	צ	n Quadrats. m Quadrats.
ע	ק	ר	Spaces.	ש	ת		ם	:	Quadrats.

GREEK.

The ancient Greeks being divided into numerous governments, spoke the language differently in each province. Their provincial peculiarities were not only used by the common people, but also by their celebrated poets, historians, and dramatists; and hence obtained the name of Dialects.

The different modes of speaking the Greek language, by the ancients, may be classed under the four following *genera* or *dialects*, viz. the *Attic*, the *Ionic*, the *Doric*, and the *Æolic*. The Greek poetic writings consist generally of a mixture of two or more of the above-mentioned dialects; as, *ex. gr.* Homer, probably the most ancient Greek writer extent, generally uses the Ionic dialect, yet he occasionally introduces one or two others: Pindar's dialect is, in the main, the Doric; yet his works are not entirely exempt from instances of words written in the other dialects. *Et rù de cæteris.*

The Ionic dialect prevailed in Asia Minor and its adjacent islands. Examples of it are found in the works of Hippocrates and Herodotus. This dialect is known by the following marks. It substitutes η for α, as φιλίη for φιλία; ε for α, as γελέω, for

γελάω; and α for ε, as τάμνω for τέμνω. It substitutes κ for π, as κῶς for πῶς; π for φ, as ἀπαίρομαι for ἀφαιροῦμαι. In this dialect hardly any thing is contracted, and diphthongs are resolved into two syllables.

The Attic dialect was the language of the Athenians, in which are written the works of Plato, Thucydides, Isocrates, Xenophon, Demosthenes, Aristophanes, &c. This dialect is distinguished by the following peculiarities; *viz.* it changes σ into ξ, as ξὺν for σὺν; σσ into ττ, as θάλαττα for θάλασσα; σ into ρ, as ἄρρην for ἄρσην. Contractions abound in this dialect.

The Doric dialect was spoken by the Lacedemonians, and the inhabitants of Argos, Epire, Rhodes, and Crete; and is preserved in the writings of Pindar, Theocritus, and Archimedes. Its peculiarities are as follow: α is used instead of η, as φάμα for φήμη; α for ε, as πιάζω for πιέζω; γα for γε, as ἔγωγα for ἔγωγε; α for ω, as μεσᾶν for μεσῶν, πρᾶτος for πρῶτος; φ for ει, as κλᾶδας for κλεῖδας; η for φ, as ζῆν for ζᾶν; η for ει, as κοσμῆν for κοσμεῖν; ω for ου, as μῶσα for μοῦσα; ω for ε, as ὦνεκα for ἕνεκα; αι for ει, as αἶδε for εἶδε; ευ

for ε, as ἀλεῦμαι for ἀλοῦμαι; ω for ο, as τύπτοισα for τύπτουσα.

The Æolic dialect was spoken by the Bœotians and their neighbours; and is preserved in the writings of Sappho and Alcæus, a small portion of whose productions have escaped the wreck of time. This dialect is distinguished as follows: it changes ο into ω, as κῶρος for κόρος; ω into ο, as ἔρος for ἔρως; α into ε, as θέρσος for θάρσος; αις into αις, as καλαὶς for καλὰς. The Latin language is said to have been derived from this dialect.

The Reader will also observe, that in the Æolic dialect the situation of the accent is changed, being placed on a preceding syllable, as κάλος for καλὸς. The asper is almost entirely omitted, as ἤλιος for ἥλιος; and instead of ι, the following consonant is doubled, as σπέρρω for σπείρω, χέρρες for χεῖρες.

"Oriental Grammarians have, with much propriety, divided the consonants into three classes, corresponding with the organs employed in sounding them. Thus π, β, φ, μ, being sounded by the lips, are hence called labials. On the other hand, τ, δ, θ, ς, λ, ν, ρ, enunciated by a contact of the tongue with the extremities of the

upper teeth, are for a similar reason styled dentals; while κ, γ, χ, uttered by a contraction of the larynx, receive the name of gutturals.

"This distribution of the consonants, though here confined to the Greek alphabet, necessarily extends to any other system of letters, and well deserves the attention of him who would acquire a philosophical acquaintance with the origin and derivation of words. To the interchange of the homogeneous consonants it is chiefly owing, that the primeval language of men, at first rude and barren, became copious (the same original term hence splitting itself into many), was afterwards diversified into dialects, and at length lost in distinct languages. Nor is it, I conceive, beyond the reach of philological inquiries to prove, that the simple terms of any one language have their kindred terms in all the other languages, disguised indeed by the differences of character, termination, and meaning; and that they may be traced back through the several changes of social life, till they meet, like so many spreading branches, in few common roots.*"

The Greek is one of the sacred lan-

* Jones's Greek Grammar.

guages, and more frequently used in printing than any of the rest; which makes it necessary almost for every printing-office to be furnished with Greek letter, though not to the same amount of weight; for a quantity of Greek letter that will moderately fill a case, and consisting of no other than useful sorts, is sufficient to serve for notes, mottos, words, &c. and such a collection of useful sorts may be lodged in a common pair of cases, by dividing some of the boxes of the upper case for the accents, and omitting useless letters, ligatures, and abbreviations. This was impracticable when ligatures and abbreviations were in use; for then seven hundred and fifty boxes were required for the different sorts in a fount of Greek. What induced the first founders of the art, to perplex themselves with cutting and casting so many different abbreviations and contractions may be partly guessed, by supposing that they were intended to imitate Greek writing, and to grace them with the same flourishes of the pen; but what could prompt them to confound themselves with an infinite number of ligatures, we cannot well account for, and only suggest, that it was the contrivance of letter-cutters to promote their own business.

But this unprofitable system has almost entirely lost its credit; and Greek, at present, is cast almost every-where without ligatures and abbreviations, unless where founders will not forbear thrusting them in; or where they have express orders to cast them. Some few ligatures, however, not only grace Greek letter, but are also profitable to a compositor who knows how to use them properly.

But as we have intimated, that the useful sorts of a fount of Greek letter may be lodged in a pair of cases that contain no more than two hundred and seven boxes, we will make good our assertion by a scheme for that purpose, which will incontestably prove that a great many of the sorts must be needless, where their number occupies seven hundred and fifty boxes. It must however be observed, that almost three hundred of these sorts are the same, and have no other difference than that of being kerned on their hind side; for there has been Greek with capitals kerned on both sides. But before we enter upon the subject of ligatures, it will be most proper to dispose of the single letters of the Greek, consequently we have presented the reader with the alphabet on the following page:—

THE GREEK ALPHABET.

Characters.	Names in Greek characters.	Names in English characters.	Sounds.	Numerical value.
Α α..	Ἄλφα ..	Alpha ..	a	1
Β β ϐ..	Βῆτα ..	Beta ...	b	2
Γ γ ϝ..	Γάμμα .	Gamma .	g	3
Δ δ...	Δέλτα .	Delta ..	d	4
Ε ε ...	Ἒψιλὸν	Epsilon .	e short	5
Ζ ζ ϛ..	Ζῆτα ..	Zeta ...	z	7
Η η...	Ἦτα ..	Eta	e long	8
Θ ϑ θ..	Θῆτα ..	Theta ..	th	9
Ι ι....	Ἰῶτα ..	Iota	i	10
Κ κ ϰ..	Κάππα .	Kappa ..	k c ...	20
Λ λ ...	Λάμβδα	Lambda	l	30
Μ μ...	Μῦ ...	Mu	m	40
Ν ν...	Νῦ	Nu	n	50
Ξ ξ...	Ξῖ	Xi	x	60
Ο ο...	Ὂμικρὸν	Omicron	o short	70
Π ϖ π..	Πῖ	Pi	p	80
Ρ ρ ϱ..	Ῥῶ	Rho	r	100
Σ ς σ..	Σίγμα ..	Sigma ..	s	200
Τ τ ...	Ταῦ ...	Tau	t	300
Υ υ....	Ὑψιλὸν	Upsilon.	u	400
Φ φ ϕ..	Φῖ	Phi	ph	500
Χ χ...	Χῖ	Chi	ch	600
Ψ ψ...	Ψῖ	Psi	ps	700
Ω ϖ...	Ὦμέγα	Omega .	o long	800

The Greek alphabet contains seventeen consonants, and seven vowels.

Two vowels sounded together form a diphthong; of which six are called proper diphthongs, formed from the vowels (including α short) with ι or υ.

αι αυ ει ευ οι ου.

These diphthongs are exemplified in the following words:—μεσαῖς, αἰγασμὸς, λέγει, εὐροκλύδων, οἶστρος, and οὗτα.

Instead of αι improper, ηι, and ωι, the Greeks write ᾳ, ῃ, and ῳ; the point under these vowels denoting the iota, which therefore is called *iota subscriptum*, *i. e. iota* subscribed. But because capitals have no subscripts, the iota is put in lower-case to the capital letter; as, ΤΩι ΔΕΝΔΡΩι.

The Greek vowels admit of two aspirations, viz. *spiritus asper* ['] and *spiritus lenis* [᾽].

Spiritus asper has the sound of an h: and *spiritus lenis* denotes the absence of that sound.

All the words that begin with a vowel have one of these aspirations over them; but the vowel upsilon admits of no other than the *spiritus asper* at the beginning of a word.

In diphthongs, the *spiritus* is put over the second vowel; as αἰγασμα, not ἀιγασμα.

The letter ρ, at the beginning of a word, has an *asper* over it, as ῥάβδος; and where two ρ's meet in a word, the first has a *lenis*, and the other an *asper*, as ὀῤῥὸς.

The Greek has three accents, viz. acute, [ʹ], which can fall only upon one of the three last syllables, of a word, as ὀρφανίζω, ποτρίκανον, χειμέριος.

Grave [ˋ], which must only be placed on the last syllable, as χειμὰς, ποταμὸς.

Circumflex [῀], which only occurs on the last syllable, and the last but one, as ποτιῶ, συλλοβοῦσα.

The apostrophe [ʼ] is used for cutting off the vowels α, ε, ι, ο, and the diphthongs αι and οι, when they stand at the end of a word, and the next word begins with a vowel; as ἀλλ' ψιν, ὅ for ἀλλὰ ὄψιν; δ' ὑγρὸν, for δὲ ὑγρὸν.

Sometimes the apostrophe contracts two words into one, as κᾀγὼ, for καὶ ἐγὼ; ἐγῶ'μαι, for ἐγὼ οἶμαι; κᾠργυρὸν, for καὶ ἀργυρὸν.

Sometimes an apostrophe supplies the first vowel beginning a word; as, ὦ 'γαθὲ, for ὦ ἀγαθὲ; ποῦ 'ςι, for ποῦ ἐςι. This is chiefly used in poetry.

But the prepositions περὶ and πρὸ suffer no apostrophe, though the next word begin

with a vowel; for we write περὶ λαῶν, πρὸ ἡμῶν, πέρι μέτρων, κ. τ. λ.

The diæresis [¨] separates two vowels, that they may not be taken for a diphthong: thus, αὐτὴ with a diæresis makes three syllables; but without a diæresis αυ is a diphthong, and causes αὐτὴ to consist of but two syllables.

Diastole [;] is put betwixt two particles that would bear a different sense without it; thus, ὅ,τε ὅ,τι signify *whatever;* whereas ὅτε stands for *as*, and ὅτι for *that*. Τό,τε, with a diastole implies *and this*, but when without, it answers to the adverb *then*.

The sign of interrogation, in the Greek, is made by a semicolon [;], as, Τὶ λέγεις; *What dost thou say?*

The colon, in the Greek, is made by an inverted full-point [·].

Besides the above there are several figures of speech in the Greek tongue to which the Reader must attend, as they will be of great use to him in distinguishing the *errata* of authors and compositors, from the several anomalous licences of the Greek poets and historians; they are eleven in number, viz.

Prothesis is a letter or syllable added

to the beginning of a word, as τεταγὼν for ταγὼν, σμικρὸς for μικρὸς.

Aphæresis is the taking away a letter or syllable from the beginning of a word, as ὁρτὴ for ἑορτὴ, ἱρὸς for ἱερὸς.

Syncope is the taking away of a letter or syllable from the middle of a word, as εὑράμην for εὑρησάμην, ἐγένατο for ἐγενήσατο.

Epenthesis is the addition of a letter or syllable to the middle of a word, as ἔλλαβε for ἔλαβε, ὁππότερος for ὁπότερος, ξενος for ξένος.

Apocope is something taken from the end of a word, as δῶ for δῶμα, ποσειδῶ for ποσειδῶνα, βρῖ for βριαροὶ.

Paragoge is when something is added to the last syllable, as ἦσθα for ἦς, τύπτεσκε for ἔτυπτε.

Metaplasmus is the change of the last syllable of a substantive to the same case in another declension, as κλαδὶ for κλάδῳ.

Antithesis, or *Antistoichos*, is the substitution of one letter for another, as πόρσω for πόῤῥω.

Metathesis is the transposition of the letters in a word, as ἔρξω for ῥέξω, ἔπραδον for ἔπαρθον, καρτερὸς for κρατερὸς.

Synalœpha is the elision of one or two vowels coming together in different words, as τα᾽μὰ for τὰ ἐμὰ, τοὔνομα for τὸ ὄνομα.

Anadiplosis, or *Reduplication*, is the repetition of the first or second syllable, as κεκάμωσι for κάμωσι, ἀταρτηρὸς for ἀτηρος, ἐτήτυμον for ἔτυμον.

Such compositors and readers as are *not* Greek scholars, and even those who are, but have not paid attention to accents, will do well to bear in mind what has been said above concerning the proper situations of the spirits and accents; as many of the faults which so frequently offend the scholar's eye, might thereby be avoided. The following rules may be easily borne in mind:—No accent can be placed over any other than one of the three last syllables of a word. No vowel can have a spirit, except at the beginning of a word. The grave accent never occurs but on the last syllable; and this being the case, the asper grave [῾] and lenis grave [᾽] can be wanted only for a few monosyllables, and less than half the quantity usually cast would be enough in a fount. Almost all words have an accent, and they very seldom have more than one; and when this happens, it is an acute thrown back upon the last syllable from one of those words called enclitics, which in that case has none, unless it be followed by another enclitic. In no other case than this can a last syllable have an

acute accent, except before a full point, colon, or note of interrogation, when the grave accent on the last syllable is changed to an acute; a circumstance which has often led printers who were ignorant of the reasons for accenting the same word differently in different situations, to think that there was an error in their copy, and thus to make one in their proof. Most errors however proceed from those who do not think at all about the matter,—"*qui correctiones non curant, et cantando literas jungunt, quod non potest fieri, nisi mendose.*"*

* It will be seen, by our scheme of the Greek cases, that we have removed the accents, &c. from the three lower, to the three upper tiers of boxes on the left hand side of the case, in order to bring the capitals more under hand, by placing them in the compartments usually allotted to the above-mentioned sorts—this alteration has been adopted in consequence of the accents getting into disuse in the general run of modern Greek. By a reference to the usual schemes of the Greek lower-case and the alphabet, there are no less than seven sorts in the modern Greek, to which no situations have yet been assigned, this deficiency is supplied without much encroachment on the habitations of their neighbours; the alterations are as follow: first, the gamma box is divided, into which his brother g is received; secondly, the hair spaces are removed from above the delta, in order to admit the long tau; thirdly, the sigma is transposed from above the eta, to the box over the epsilon; fourthly, the vacant sigma box being separated, makes room for the crooked rho and also for a second psi; fifthly, the kappa occupies only half the usual space, thereby we provide for an additional character of the like signification; sixthly, the zeta also gives up a portion of his birth, in order that his brother may be near at hand; seventhly, the pi acts the same friendly part as the last-mentioned character, by yielding one half of his habitation to his relative: and though last, yet not the least in importance, is the alteration of the spaces, which are brought together under the hand; it is unnecessary to make any observation upon this essential advantage, having sufficiently expatiated on this subject in our remarks upon the alterations which we thought proper to make in the common cases.

Greek Upper Case.

ϐ	ς	ει	ȣ	kern ᾳ	kern ῃ	kern ῳ
ȣ́ ȣ̀	ȣ̃ ȣ̂	ȣ̀ ȣ̃	ȣ̀ ȣ̃	ȣ̀ ȣ̃	ȣ̀ ȣ̈	ȣ̀ ȣ̀
´ `	~ ˆ	˘ ˘	˘ ˘	˘ ˘	˘ ˘	˘ ˘
Α	Β	Γ	Δ	Ε	Ζ	Η
Θ	Ι	Κ	Λ	Μ	Ν	Ξ
Ο	Π	Ρ	Σ	Τ	Υ	Φ
Χ	Ψ	Ω	ϰ̀	ᾳ	ῃ	ῳ

ά	ὰ	ᾶ	ἀ	ἀ	ᾶ	ᾶ	ᾶ	ᾶ	ᾶ	ᾶ	ᾶ	ᾶ	ᾶ
έ	ὲ	ἐ	ἐ	ἐ	ἐ	ἐ	ἐ	ἐ	ἐ	ἐ	ἐ	ἐ	ἐ
ή	ὴ	ῆ	ἡ	ἡ	ῆ	ἡ	ἡ	ἡ	ῆ	ῆ	ῆ	ἡ	ἡ
ί	ὶ	ῖ	ἱ	ἰ	ῖ	ἱ	ἰ	ἱ	ῖ	ῖ	ῖ	ἱ	ἱ
ό	ὸ	ὸ	ὁ	ὁ	ὁ	ὁ	ὁ	ὁ	ὁ	ὁ	ὁ	ὁ	ὁ
ύ	ὺ	ῦ	ὑ	ὑ	ῦ	ὑ	ὑ	ὑ	ῦ	ῦ	ῦ	ὑ	ὑ
ώ	ὼ	ῶ	ὡ	ὡ	ῶ	ὡ	ὡ	ὡ	ῶ	ῶ	ῶ	ὡ	ὡ

Greek Lower Case.

kern α	kern η	kern υ	kern ω	kern θ	ϝ	ς	σ	ρ	φ	ψ		β	β
β	ϐ	ſ	γ	δ		ϵ	ι	η		ϑ	θ	φ	χ
κ	ϰ	λ		μ		ν	ο	π	ϖ	ρ	ϱ	n quadrats	m quadrats
ξ	ζ / ʒ	υ		τ	hair spaces / thin spaces	thick spaces	α	ω		; / .	: / -	Quadrats	

CONTRACTIONS AND LIGATURES USED IN THE GREEK LANGUAGE.

THE labour which a continual multiplication of manuscripts required, was the cause of the invention of sigla, ligatures, and contractions, in order that the writing might be more rapidly executed. Nor even for some time after the invention of printing, did those signs, peculiar to the Greek language, decline; on the contrary, many books of the sixteenth century are now extant, where the words are almost as much contracted as in the Grecian manuscripts of three hundred years previous. This, however, is not the place for a dissertation on the abbreviations of any tongue; more especially as we have already given two articles upon the subject:—one of them, on Latin abbreviations, the reader will find in page 210: and the other on the Characters of the Domesday-book, and other ancient Records of England, at page 218. The present list, therefore, consists only of the arbitrary marks in use in the Greek language, which widely differ from those of the English, by having some similarity to the letters they represent, although complicated and confused by being linked together: hence they were denominated ligatures, from the Italian word *legatura*, a fillet, or tie. It remains only to be remarked, that the modern Greeks retain in some degree the custom of contracting words in their writings; and that M. Calbo, who lately visited this country, had, by his own extraordinary industry, amassed together the most extensive and perfect series of Greek contractions, which probably any person was ever yet possessed of. The authorities which have been used in compiling the present collection, are *Calligraphia Græca*, by John Hodgkin—Lond. 1794,

Folio. Astle's *Origin and Progress of Writing*—Lond. 1803, Quarto. *A Practical Grammar of the Greek Tongue*—Lond. 1740, 8vo. and *Elementa Linguæ Græcæ*, by Dr. J. Moor—Edin. 1806, 8vo.

Α α

αι αι . . . . . αι

αλ . . . . . αλ

αλλ . . . . αλλ

αλλ . . . . 'αλλ

αν αν αν . αν

απο . . . . . ἀπὸ

αρ . . . . . αρ

ας . . . . . ας

αυ . . . . . αυ

αὐτ . . αὐτοῦ

Γ γ ſ

γαρ . . . . . γᾶρ

γγ . . . . . γγ

γε . . . . . γε

γεν . . . . . γεν

γενεται . . . γένεται

γρ . . . . . γρ

Δ δ

δα . . . . . δα

δαν . . . . δαν

δε . . δε

δια . . . . . διὰ

Ε ε

ει . . . . . ει final

ειναι . . . . . εἶναι

εκ . . . . . εκ

ελ . . . . . ελ

εν . . . . . ἐν

εν . . . . . ἐν

εξ . . . . . 'εξ

επι . . . . . επι

επ . . . . . 'επ

επι . . . . . 'επι

ερ . . . . . ερ

εστ . . . . 'εστι

ευ . . . . . ευ

Η η

ηκ . . . . . ηκ

Θ ϑ θ

θα . . . . . ϑα

θι . . . . . ϑαι

Κ κ

και . . κἀὶ

κατ . . . . . κατα

κεφαλαιον

κι . . . . . κι

Λ λ

λα . . . . . λα

λλ . . . . . λλ

λο . . . . . λο

M μ

μαρ μαρ . μαρ

μεθ . . . . . μεθ

μεν μεν . . . . μεν

μενος . . . . . μενος

μετὰ . . . . . μετὰ

μην . . . . . μην

μι . . . . . μι

μων . . . . . μων

O ο

ὄιον . . . . . ὄιον

ὄνιος . . . . . ὄνιος

Π ϖ π

ΠΗ 50
ΠΔ 500

When the letter Π surrounded another letter, it signified πέντε or five, and gave five times its own value, to the letter so surrounded.

παρ . . . . . παρ

παρὰ . . . . . παρὰ

περ . . . . . περ

περι . . . . . περι

πην . . . . . πην

Hebrew Lamed or numerical character for 90

P ρ

ρα . . . . . ρα

ρι . . . . . ρι

ρο . . . . . ρο

Σ ς σ

Sometimes used as a medial σ

σα . . . . . σα

σαν . . . . . σαν

σε . . . . . σε

σημεῖον . . . . σημεῖον

σθ . . . . . σθ

σθαι final

σι . . . . . σι

σο . . . . . σο

σπ . . . . . σπ

στο . . . . . στο

σσ . . . . . σσ

In the alphabet of Cadmus, this character is placed for σσ, but its modern use is a numeral for 900.

σσαι . . . . σσαι

σση . . . . . σση

σσω . . . . σσω

σχ . . . . . σχ

σχο . . . . . σχο

σχρ . . . . . σχρ

T τ τ

τα . . . . . τα

ται . . . . . ται

ταις . . . . . ταις

ταῦτα . . . . ταῦτα

τε . . . . . τε

τη . . . . . τη

τεν ..... τεν	τρ ..... τρ	υς ..... υς
τῆς ..... τῆς	τῷ τῶ .. τῷ τῶ	υσι ..... υσι
το τὸ το . το	τῶν τῶν .... τῶν	Χ χ
		χα ..... χα
το ..... το	Υ υ	
τὸ ..... τὸ	υ ..... ῦ	χε ..... χε
τὸν τὸν .... τὸν	υι ..... υι	χη ..... χη
τοῦ τοῦ τοῦ { τοῦ τοῦ	υν ..... υν	χο ..... χο
	ὑπ ὑπ ... ὑπ	χρ ..... χρ
τοὺς τοὺς { τοὺς τους	ὑπὲρ ..... ὑπὲρ	Ω ω
	ὑπὸ ..... ὑπὸ	ω ..... ῶ

* It will be proper to remind the reader, that he must not consider the foregoing list of contractions as containing the whole which have been invented; their number being so great, that they would have extended our list to more than treble its present size, without proving of greater utility to the compositor, for whose assistance they are here presented. For the following reasons we have deemed it sufficient to insert those only which have been generally used in England: first, it not unfrequently happens, in the reprints of early printed books, that the compositor meets with Greek, in which the ligatures have been used; but, then, such only as we have given are likely to arrest his attention; consequently it would be fruitless to perplex him with what he can have no occasion for: secondly, the multiplicity of characters invented by the Scribes, prior to, and during the infancy of the art, can be regarded in no other light than as mere curiosities, which are interesting only to the scholar and the antiquary: thirdly, it is not probable that an instance can be adduced at the present day, of an early Greek manuscript, containing ligatures, &c. being placed in the hands of a compositor: should it be required to print or extract from any such, they would, unquestionably, be transcribed, in order to preserve them from liability to injury, while passing through the regular routine of a printing-office: fourthly, as they are now become obsolete, no author would think of copying contractions out of any Greek manuscript, well knowing that the printer could not execute them for him. Under the above considerations, we flatter ourselves that we have amply fulfilled our duty on this head, in furnishing the above list.

CHAP. XII.

ALPHABETS OF ANCIENT LANGUAGES.

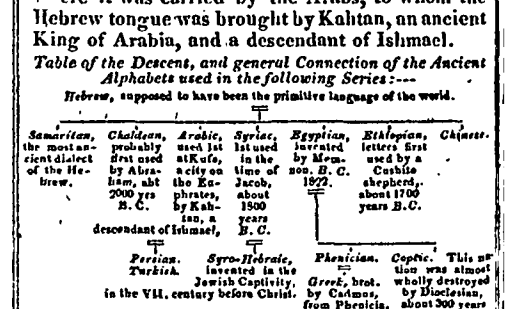
BESIDE the Greek and Chaldean-Hebrew Alphabets already given, a Printer's Grammar generally contains specimens of many others, belonging principally to the Eastern Nations, which are both obsolete and modern. The greater part of them are now rarely used; but in order to give an idea of the characters of other countries, as well at the present day, as at a former period, we have inserted an extensive collection of the most ancient and singular, so classed and explained, as to render a reference both easy and satisfactory. It has been, however, the principal defect of Typographical Grammars on this particular subject, that their information is so barren, that little else can be learned from them, beside the power of each letter, as it corresponds with the English Alphabet: the peculiar names of the characters are also omitted, and the reader is left in doubt whether the language be read from left to right, or from the right hand to the left. These faults evidently arose from the compilers copying after each other, without taking the trouble to gain any new or useful information; but in the present instance, as we have seen the error, so we have attempted to remedy it, by giving such an account, both of each language and the powers of the letters, that some idea is given to the reader of the genius and construction of the various tongues. This information has been the result of much labour and research; in addition to which, for the benefit of those who wish for further instruction on this peculiar branch of learning, we have mentioned the authorities consulted, to which they also may refer.

It remains only to be stated, that we are greatly indebted to Dr. Fry, for the liberal use he has given us of several ancient alphabets engraved for his admirable and learned work, entitled *Pantographia*.

Ancient languages may be classed in the following order, which has been adopted from the plan followed in the *Dictionnaire des Sciences*, contained in the article on "Caracteres et Alphabets de Langues Mortes et Vivantes." The Hebrew, Samaritan, and the Chinese tongues, have each laid claim to originality, but the latter may be considered rather as a figure or emblematical writing, than a regular system of letters and words. Of the other two, it is generally supposed, that they, together with the Assyrian and Chaldaic, are the same in effect, but differing in the forms of the characters, (vide the page of Samaritan and Hebrew which will appear in this chapter, in the order of succession). These alphabets, it is stated, were used before the Flood, and to some of them is attributed an age equivalent with the time of Adam. This, however, must in a great degree be regarded as traditionary, but, at the same time, as a powerful evidence in favour of their superior antiquity; and, therefore, the Hebrew may be considered as the first great source whence the other tongues of the earth have been derived. The immediate descendants of the Hebrew were the Samaritan, the Chaldaic, the Arabic, the Syriac, the Egyptian, the Ethiopian, and the Syro-Galilean; and its collateral issue were the Phœnician, and the Palmyrenian. From the Phœnicians the Greeks acknowledged to have received their letters; and from them the discovery was communicated to the Romans. Thence it spread to all the European nations, excepting Turkey,

ere it was carried by the Arabs, to whom the Hebrew tongue was brought by Kahtan, an ancient King of Arabia, and a descendant of Ishmael.

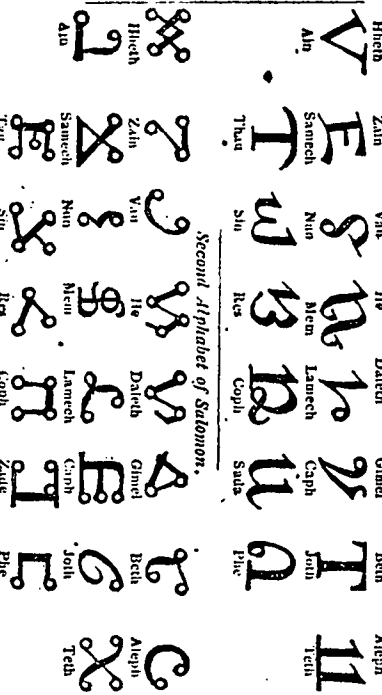
Table of the Descent, and general Connection of the Ancient Alphabets used in the following Series:---


Hebrew, supposed to have been the primitive language of the world.
Samaritan, the most ancient dialect of the Hebrew.
Chaldean, probably first used by Abraham, abt 2000 yrs B. C.
Arabic, used 1st at Kufa, a city on the Euphrates, by Kahtan, a descendant of Ishmael.
Syriac, 1st used in the time of Jacob, about 1800 years B. C.
Egyptian, invented by Memnon. B. C. 1972.
Ethiopian, letters first used by a Cushite shepherd, about 1700 years B. C.
Chinese.
Persian.
Turkish.
Syro-Hebraic, invented in the Jewish Captivity, in the VII. century before Christ.
Phenician.
Greek, brot. by Cadmus, from Phenicia, B. C. 1493.
Coptic. This nation was almost wholly destroyed by Diocletian, about 300 years after Christ.
Etruscan.
Dalmatian.
Georgian, invented about the IV. century, A. D.
Sclavonian.
Bulgarian.
Russian.
Gothic, letters taken the Greek, by Gulphilas, A. D. 270.
Roman.
Franks.
Charlemagne.
Celtic.
Teutonic.
Irish.
German.
Saxon.
English.
Anglo-Saxon, or Domesday.

Taking, therefore, the Antediluvian Hebrew as our foundation, we shall first shew the alphabets it gave immediate rise to; then proceed with the next language in the order of time, and so continue until the whole series of ancient characters shall be completed.

HEBREW.

Of the modern Chaldaic tongue, generally denominated the Hebrew, we have already given a particular description; (vide page 260) and, therefore, what is here introduced relates to the ancient alphabets only. "Theseus Ambrosius," says Duret, (in his *Histoire de l'Origine des Langues de cest Univers,*) "in his Appendix of many and various letters and tongues, attributes to King Salomon the two following alphabets, but by what authority the author does not say; if they be not from certain treatises falsely attributed to him, written in the same, of which, it is supposed that Apollonius Thianeus was the interpreter and commentator."

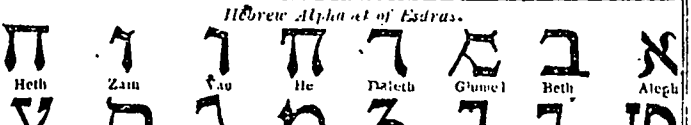


The above are to be read from right to left, and are of the same powers as the modern Chaldee.

In the following alphabet, we find the original figures of the letters used at the present time by the Hebrew nation. "These were invented," says Duret, "when the ten tribes revolted, and rent the crown of Judah from Rehoboam, the son of Solomon." Their invention is attributed to Esdras,

or his son Jesus, High-Priest to the tribes of Judah and Benjamin, which placed themselves under the government of Jeroboam, at their chief city, Sichen, in the land of Samaria. In that country they greatly declined from the Jewish faith to idolatry, but they still retained the use of their ancient characters; and, therefore, Esdras and such of the Jews as held to their original religion, invented the following alphabet, which is written, like the foregoing, from right to left.

Hebrew Alphabet of Esdras.



* It was in the above alphabet that the point was first attached to this letter: by placing it upon the left hand tooth, the sound becomes Sin.

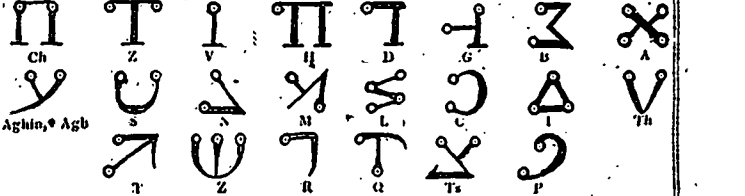
CHALDRAN.

It cannot be doubted, that the first letters invented by man, were representations of visible objects of Nature; and in proof of this, we find that the characters which form one of the most ancient alphabets now extant, were designed from certain figures made by the stars, and hence it was denominated the Celestial Alphabet. Something of the same nature may be seen in the second alphabet of Salomon, which we have already given, as well as in one of the ancient Greeks hereafter inserted; but the resemblance of the heavenly bodies will be most perfectly discerned in the following alphabets used by the ancient Chaldeans. Gaffarel, in his volume entitled *Unheard of Curiosities*, has been the most particular in the history of these singular characters, and from that mystical but curious work, as translated by Edmund Chilmead, and printed in 1650, the ensuing account has been compiled. In the 15th Chapter of the 4th Part,

which treats more particularly upon "the reading of the stars, and whatever else is seen in the air," he first assumes from Isaiah xxxiv. 4, where it is said, "the heavens shall be rolled together as a scroll;" and from several similar passages of Scripture, that the skies are to be considered as a volume, and in it there must of consequence be letters, words, and sentences, for the perusal of man. It would seem, that between this "*Writing of the Angels*," as it was anciently called, and the science of Astrology, there is a near connection; because the nature and influences of the stars themselves, are to be taken into consideration, when the letters of heaven are read. But if the subject be viewed closer, it will appear to be of a more literary nature, since the stars were formerly distinguished by the letters of the ancient Hebrew alphabet; and when that was concluded, then two letters were used, and sometimes a third was added to express the disposition of the star, as the former were meant to denote its situation. Most of the Eastern nations supposed the constellations to represent various figures significative of seasons, &c. but the Hebrews considered them as words, formed not only by those distinguishing characters which they had attached to them, but also made up by the starry courses bringing different letters in contact; and thus forming different words. The author of the work already mentioned, gives five rules for reading this celestial language, which are as follow; firstly, it is to be observed how the stars are placed, whether close together, or spread abroad; secondly, it must be remembered that the fixed stars may; in the course of years, by diverse aspects of the planets, form various words: thirdly, particular attention must be paid to the appearance of new stars; since, by their situations, they materially alter the sense of the ordinary ones, as an additional letter will in common writing: fourthly, the vertical stars should be well considered, because their declination influences the countries immediately beneath them: and, fifthly, the reader of these magnificent characters, must be able readily to distinguish the four cardinal points of Heaven, and the stars peculiar to them; for by this rule, good or evil fortune is to be ascertained; the former being read vertically, or from West to East, and the latter from the North to the West. Throughout the whole system of this starry writing, a close coincidence with the Hebrew language may be observed; the sentences formed by it are short and abbreviated, and sometimes only the most prominent word is presented to the eye. Thus, a short time before the Babylonish captivity, five stars exactly above Jerusalem, formed the Hebrew word *Nataq*, which signifies, to drive out, break, and cast down. The numbers of the letters as they rank in the Hebrew series, are also to be taken to discover the time when their prophecies shall be accomplish-

ed; in the above instance, they amounted to 606; which designated the year when the Jewish kingdom was destroyed, counting from Saul to Zedikiahus.

The original method of engraving these letters for printing, most completely identifies them with the constellations, as the points were left entirely clear upon a broad connecting line of black; so that they had, as it were, the appearance of bright stars, disposed in various forms, shining clearly in a dark midnight sky. The Celestial Alphabet which follows, was cut for Dr. Fry's *Pantographia;* and though the characters have not the force of those in Gaffarel, it must be acknowledged that they have considerably more elegance. The invention of these letters is attributed to the ancient Hebrew astrologers. Their names were similar to those already given.

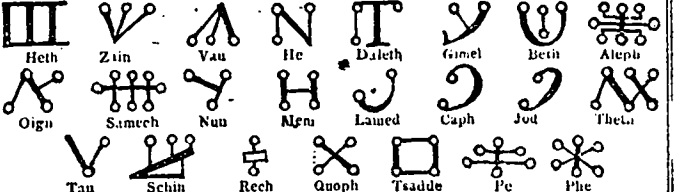


* This letter is particularly doubtful in its sound; the modern way is to call it *Sin*, but the Dutch and German Jews make it a guttural, and pronounce it *Oigin*, which is supported by the above authority.

It is likely, that the same people which formed a language from the lights of heaven, would also be curious in their enquiries after that of the angels. It is usually supposed that the blessed spirits of the skies have a peculiar dialect of their own, and this receives some support from more than one passage of Scripture. For instance, St. Paul says, in his *First Epistle to the Corinthians*, (Chap. xiii. ver. 1.) "Though I speak with the *tongues* of men and *angels:*" again, St. John the Divine, in his *Revelation*, (Chap. xiv. ver. 3), says, when speaking of the praises of the re-

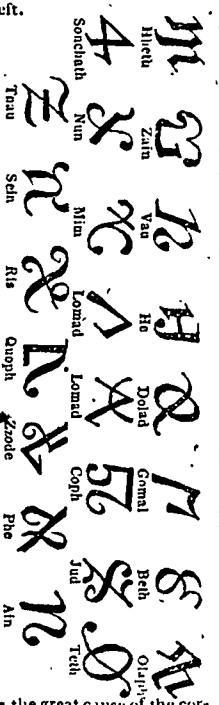
deemed, "and they sang as it were a new song,——and no *man could learn that song*, but the hundred and forty and four thousand which were redeemed from the earth."

Most of the writers, however, who have touched upon this mysterious subject, have contributed greatly to bring it into disrepute by connecting it with cabalism; and not unfrequently with magic. They usually make it a language nearly resembling the Hebrew; and this has been thought plausible by many, because when Adam was created, his Maker would give him his own language along with his own image. But while the possibility, and even the probability of a celestial tongue may be allowed, it may fairly be doubted whether it be in the possession of men. Tradition is the principal guide left us, in this case, and the following alphabet is preserved as that used by the Angels when written down, otherwise their characters are those already given as formed by the stars. The ancient Hebrews called them both Chetab Malachim, or the Writing of the Angels; and Duret, on the authority of the Cabalists, states that the Tables of the Law given to Moses, were written with these letters. The following are similar to the foregoing in their names, powers, and method of reading.



The first of the ensuing is another ancient Chaldean alphabet, used by a nation of Mesopotamia, called Bagadet, which is under the power of the Turkish Emperor, and which forms the frontiers of the realm of the King of Persia. The common language of the Turks and Arabs, is generally used and written by the Bagaders; but the natives of the place are greatly attached to their ancient Chaldaic characters which they sup-

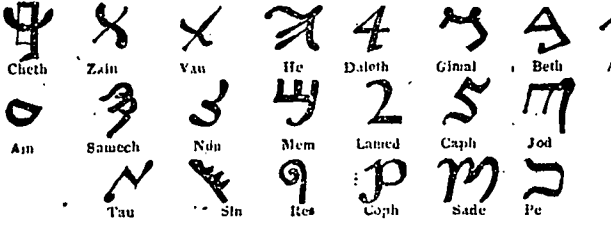
pose originally to have been brought from Babylon, and which they have long preserved with the highest respect, from the traditions of their ancestors. These letters are written and read from right to left.



The Babylonish Captivity was the great cause of the corruption of the Jewish language; when the Chaldean be-

came blended with the Hebrew; and the second of the above alphabets is another proof of the assertion. This Chaldean character, which is similar in name, power, and reading as the last, was used by the Jewish inhabitants of Persia and Media, as well as by those of Babylon.

The annexed alphabet, the letters of which are known by the same names, and possess the same powers, as the Chaldean characters already given; is referred by Baron Spanheim to the time of Abraham. That laborious and erudite author, in his *Second Dissertation on the Excellency and Use of ancient Coins.* Lond. 1706, folio, p. 80, gives these letters on the authority of the celebrated Edward Bernard, who, in his vast researches concerning Samaritan, Chaldean, and Hebrew literature, had extracted them from various Jewish coins, used 5509 years before Christ. These writers with great propriety, however, consider the present alphabet as Samaritan, in which they are evidently supported by the shape of the letters, which appear to be only one remove from the original Samaritan form.



The following alphabet, which is also attributed to the time of Abraham, is still more purely Hebraic in the formation of its characters. "It consists," says Duret, "of Capital letters, extracted from ancient marbles brought from the Holy Land." There is however a *slight* variation in the names of some of the characters, and there duplicates of five, with an additional character, like the Nun, placed at the end of the alphabet.

There is another alphabet attributed to the Patriarch Abraham, which was given him when he crossed the river Jordan, which divides Chaldea from Canaan; and the Jews have asserted, that the characters were found engraved on a statue which stood by that river, together with the names of the Children of Israel, which were supposed to have been added when they crossed the water under the command of Joshua. The erection of this Altar or Pillar, by Abraham, in Canaan, is mentioned in Genesis xii. 7, and his journey into that country in verses 5 and 6 preceding. The additional memorial erected by the children of Israel, is described in Joshua, ch. iv. v. 1—8. Abraham of Palmis, a learned Jew; Augustine Pantheus, a Venetian Priest; and Theseus Ambrosius, all relate the same circumstance.

The Chaldean writers did not always make use of points to stand for vowels. Duret relates that in many of the Eastern tongues, such as the Hebrew, Syriac, Ismaelitish, Arabic, &c. are to be found words and vowels belonging to the Chaldean. It appears that after the invention of points, many devised vowel marks for themselves, and the modern Chaldeans, who live under the rule of the Turks, when they use their ancient characters for their sacred books, preserve this practice. Most of their nation are not of the Jewish faith, but follow the Nestorian heresy, concerning the divinity and humanity of Christ. They use the Turkish language in speaking and common writing, but they celebrate divine

* Duret shews several variations of the characters thus marked.

service in a speech which they term Chaldaic, and write their doctrinal books in a character peculiar to themselves.

To the ensuing alphabet, which was only used by the Jews during their Captivity, belong five vowels, which are represented beneath, with their corresponding powers. These are Ambrosius, in his *Treatise of many and Divers Languages*, called the following the

Judaic Alphabet.

Before closing our series of the Chaldean alphabets, we shall once *more* shew that now in use, commonly called the Hebrew; in connection with the Samaritan, of about the same age as that which we have already given as used by Abraham.

The Samaritan Alphabet,

With the Chaldaic, or Modern Hebrew.

Samaritan	Chaldee	Names.	Sound.	R S*	Nos.	Finals.
𐤀	א	Aleph..	Arlef..	S	1	ך 1000
𐤁	ב	Beth ..	Beth ..	S	2	
𐤂	ג	Gimel .	Gimmel	R	3	
𐤃	ד	Daleth.	Darleth	S†	4	
𐤄	ה	He.	He.	S	5	
𐤅	ו	Vau. ..	Vow...	S	6	
𐤆	ז	Zain...	Ziin...	S	7	
𐤇	ח	Cheth..	Heth ..	S	8	
𐤈	ט	Teth ..	Teth ..	R	9	
𐤉	י	Iod ...	Yod ...	S	10	
𐤊	כ	Caph...	Kaf...	S	20	
𐤋	ל	Lamed	Larmed	S	30	ך 500
𐤌	מ	Mem ..	Mem ..	S	40	
𐤍	נ	Nun...	Nun...	R	50	ם 600
𐤎	ס	Samech	Sarmech	R	60	ן 700
𐤏	ע	Ain ...	Iin	R	70	
𐤐	פ	Pe....	Pe....	R	80	
𐤑	צ	Tzaddi	Tsaddy	R	90	ץ 800
𐤒	ק	Coph..	Kof ...	R	100	ף 900
𐤓	ר	Rech..	Resh..	R	200	
𐤔	ש	Shin...	Shin ..	R‡	300	
𐤕	ת	Tau....	Thau ..	S	400	

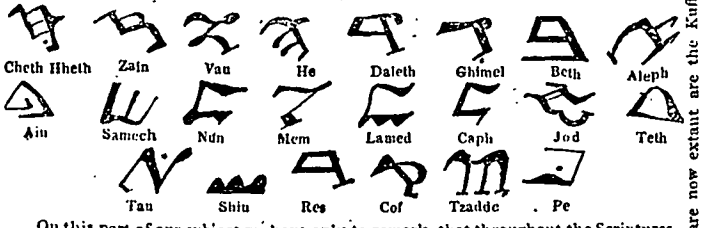
* R S in this column mean Radical or Servile.

The Samaritan alphabet given above is a series of small letters, supposed to have been brought from the Egyptians. That on the next page was, however, thought by Dr. Morton to be more correct.

† In the Hebrew this letter is a radical.

‡ This letter is servile in the Hebrew.

Samaritan, B.C. 5508.



On this part of our subject we have only to remark, that throughout the Scriptures the Chaldeans always have the character of learned men, magicians, astrologers, &c.; and that hence they were denominated Chacom or Chesem, Hebrew expressions signifying a Seer; which may remotely have given rise to the idea that letters were of magical origin, since they were first brought into existence by the Hebrews, the Samaritans, and the Chaldeans. The best introductory works on the Chaldean language, are *Levi's Linguu Sacra*, Lond. 1785-7, 3 vols. Octavo; an *Introduction to Hebrew Grammar, by Charles Wilson, D.D.* Edinb. 1818, Octavo, and the Grammar prefixed to *Parkhurst's Hebrew Lexicon*, Lond. 1792, 4to. *Nolan's Grammars of the Hebrew and Chaldaic Languages*, Lond. 1821, Duod. *Masclef's Grammatica Hebraic*, Paris, 1731, Duod.

ARABIC.

We have already stated that the Hebrew language was carried into Arabia, by Kahtan, an ancient King of that nation, and a descendant of Ishmael. The earliest letters of the Arabs that are now extant are the Kufic, which carry in their form sufficient evidence of their relation to the Hebraic. These, as being a fragment of the ancient language, are highly esteemed in Arabia, and are to be learned only in the sacred Colleges. They received their name from being first used at the City of Kufa, on the

banks of the Euphrates, and they gave way to the modern *Arabic* invented by the Vizeer Moklah,* early in the tenth Century; excepting that they are still used occasionally for the titles of books and public inscriptions, and are called by the Arabians *Lisan-ennahwi*, or the *Grammatic Language*, in contradistinction to the common Arabic, which is denominated *Lisan-clamma*, or the *Language of the People*. The Arabic now in use is written from right to left, and their alphabet, as will be hereafter shewn, is composed of twenty-eight letters; six more than are contained in either the Syriac or the Hebraic. The *Arabs* have also a character composed of the letters *Lam* and *Alif*, which they denominate *Lamalif*; it has the power of *La*, in English. The numeric value of the letters is the same as in the Hebrew; and the six extra characters, are employed like the Hebraic elongations and finals, in carrying on the series of numbers from 400, where the twenty-second letter stops, to 1000. Indeed, these latter six characters, are varied only by their points in appearance, and by a guttural or aspirate in sound, from their primitives which occur earlier in the alphabet. The Arabians use five orthographical points for the government of their characters. *Hamza*, on the letters *Alif*, *Vat*, and *Ye*, doubles the vowel. *Wesla* or *Ousla*, is set upon *Alif*, to shew that its own sound is merged in that of the succeeding letter. *Madda*, is placed upon *Alif*, to render it long, and it is used also as a mark of abbrevation. *Giezma*, on a consonant makes it quiescent; and *Tuschdid*, doubles the character on which it appears. There are also in the Arabic tongue three grammatical signs, denominated *Tanouin* or *Nunnations*; of which *Oun* signifies the Nominative case; *An*, the Accusative; and *In*, the *Genitive*; Dative and Ablative. There are of course many other points and peculiarities in this extensive tongue; much of which the Arabs suppose to be lost; but it would be impossible in the present instance to give more than a very few hints concerning a language which is so copious as to contain upwards of 80 expressions for honey, 200 names for a serpent, 500 for a lion, and more than 1000 for a sword. Indeed, the Arabians believe, that no uninspired person can ever perfectly understand it. The modern introductory work on this subject, is *Richardson's Grammar of the Arabic Language*, Lond. 1e01, Quarto. We now proceed to shew the present Arabic alphabet,

* The intrigues of this Vizeer, who lived under the Caliphs Moctader, Caher-Billah, and Radhi-Billah occasioned him to undergo three capital sentences of the Law. He first lost his right hand, then *his left*, and lastly his tongue. He complained however chiefly of his first loss, since with that hand he had thrice copied the Koran, and his manuscripts were esteemed the most perfect models of writing.

premising only, that as in most of the Eastern tongues, the characters assume a different shape according to their situation, whether initial, medial, final or single. With respect to the sound of the letters, we have added an english word to each character, containing a similar sound, which is pointed out by being put in italic.

Modern Arabian Alphabet.

Initial.	Medial.	Final Con.	Uncon.	Name.	Sound and Power.	
ا	ـا	ـا	ا	Alif..	Wall, Dress, *plain*	A
بـ	ـبـ	ـب	ب	Be....	English B	B.
تـ	ـتـ	ـت	ت	Te ...	English T	T
ثـ	ـثـ	ـث	ث	Thse..	*Thing*	Tz
جـ	ـجـ	ـج	ج	Gjun..	*Genius*	G
حـ	ـحـ	ـح	ح	Hha ...	H aspirate	H
خـ	ـخـ	ـخ	خ	Cha ..	Kh aspirate	Ch
د	ـد	ـد	د	Dal ..	Dt.....	D
ذ	ـذ	ـذ	ذ	Dhsal	*Thou*.....	Dz
ر	ـر	ـر	ر	Re ...	English R.....	R
ز	ـز	ـز	ز	Ze....	Rose	Z
سـ	ـسـ	ـس	س	Sin...	*Sound*	S
شـ	ـشـ	ـش	ش	Sjin..	English Sh	Sj
صـ	ـصـ	ـص	ص	Sad ..	Dissolve	S
ضـ	ـضـ	ـض	ض	Dad ...	Dh aspirate.....	D
طـ	ـطـ	ـط	ط	Ta....	It aspirate.....	T

Modern Arabic Alphabet continued.

Ini-tial.	Medial.	Final Con.	Locom.	Names.	Sound and Power.	
ظ	ظ	ظ	ظ	Da ...	Dth aspirate	D
ع	ع	ع	ع	Ain ..	à *guttural*.....	Y
غ	غ	غ	غ	Gain ..	*Ghastly*	G
ف	ف	ف	ف	Phe ..	English F	Ph
ق	ق	ق	ق	Kaf ..	*Cough*	K
ك	ك	ك	ك	Kef ..	English K.....	C
ل	ل	ل	ل	Lam..	English L	L
م	م	م	م	Mim...	English M	M
ن	ن	ن	ن	Nun ...	English N.....	N
و	و	و	و	Vau ..	o. u. v. w.....	W
ه	ه	ه	ه	He ...	Long E	H
ي	ي	ي	ي	Je	i. ee. y..	J

The Arabic language is divided into many dialects, which differ from each other as well in construction as in pronunciation: yet it is so generally understood, that Mr. Jackson states, that any one having a knowledge of it, may travel from the shores of the Mediterranean to the Cape of Good Hope; across the widest part of the African Continent from East to West; along the course of the White River, or Nile of the Negroes; and proceed from Marocco to the Eastern shores of China, opposite the Islands of Japan; in the whole are an immense portion of the Eastern hemisphere, and yet find the Arabic language spoken and understood, wherever he came. The Moors use the Arabian language somewhat corrupted, though the characters are the same; but in Marocco, Fas or Fez, Salee, Mogadore, and the Northern parts of Africa, the following letters were formerly used, under the name of the

Mauritanian, or Western Arabic.

Eicha Ch	Ezza Z	Elwaw U V W	Elha H	Eddal D	Eldschim G	Elba B.	Elif A
Elha H H	Essad S	Ennun N	ElmiM M	Ellam L	Elkiaf C	Elja I J	Etta T
Ethsa Thz	Eddhal Dz	Eddal Dh	Eschichim Sch	Erra R	Elkaf K	Ettsa Ts	E fa F

The above are neither the whole number, nor are they placed in the arrangement of the present Moorish characters; but the letters have been transposed to agree with those now inserted, which have been copied from *Fournier's Manuel Typographique*, Paris, 1766, Duod. Vol. II. p. 244, 279. A perfect idea of the Moorish alphabet, may, however, be gained from the Arabic; as there is but little difference in the modern sound of their letters, although the order in which they stand is somewhat transposed. The Moors form their letters four different ways, adapted to their situations, as Initial, Medial, Final, and when standing singly. They use the same ancient Arabic Numerals which are common in England, but they are sometimes written with a variation, as 1 .. for 100. There are several works on the Moorish tongue, whence much information may be derived; as *Grammatical Remarks on the Indostan Language commonly called Moors, by Captain George Hadley of Bengal*, Lond. 1776, 8vo.---*Grammatica Marusta, by the Spanish Missionaries*, Rome, 1778, 8vo,---*Grammatica Linguæ Mauro-Arabicæ, by Francis de Dombay*, Vienna, 1800, Quarto. A New Edition of *Hadley's Moorish Grammar, by Francis Gladwin*, 1808.---*An Account of the Empire of Ma-*

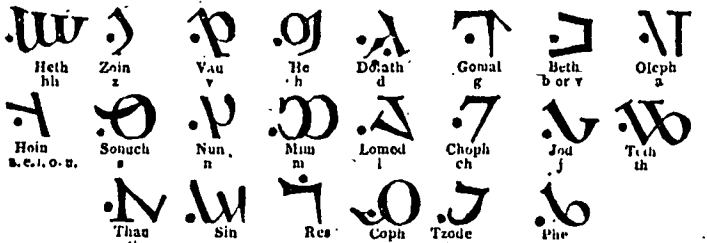
rocco, by James Grey Jackson, Esq. Lond. 1809, 4to; and the same excellent Arabist is now employed upon a Moorish and Arabian Grammar, which (from his well known abilities) may be expected the most perfect introduction to those languages yet published. Before closing our account of the Arabic, it will be proper to mention that Arabia received its name from the Hebrew word *Arub*, which signifies *West*, because that country was situated to the West of Chaldea. The Arabians themselves, however, derive it from *Yarab*, the name of their founder, whose descent from Shem, the son of Noah, is mentioned in Genesis x. 21--26. "Unto Shem also, the father of the children of Eber, even to him were children born.---The children of Shem; Elam, and Ashur, and Arphaxad, and Lud, and Aram.—And the children of Aram; Uz, and Hul, and Gether, and Mash.---And Arphaxad begat Salah, and Salah begat Eber.---And unto Eber were born two sons; the name of the one was Peleg: for in his days the earth was divided; and his brother's name was Joktan.---And Joktan begat Almodad, and Seleph, and Hazarmaveth, and *Jerah*." *(Yarab.)*

SYRIAC.

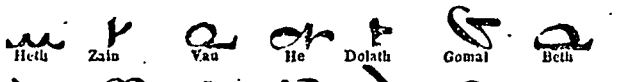
THAT the Syriac language is an immediate descendant of the ancient Hebrew, is not to be doubted, since it was frequently called by that name, as well as being denominated the Chaldean, Babylonian, Aramean, Mesopotamian, and Assyrian. It was also one of the common languages spoken by the Jews in the Babylonish Captivity; and in the *New Testament*, many words occur in this tongue. Some historians, however, carry it back to a much earlier time; and assert that it was a distinct language, when Jacob served Laban of Padan-Aram for his daughter Rachel. This, however, proves it more closely to have been a dialect of the Hebrew, since those who are even most anxious to establish the antiquity of its own characters, assign to them an existance of only 300 years before Christ; whereas Jacob left Padan-Aram 1739 years before that event. The warmest supporters of the Syriac, however, assert, that it is the ancient Hebrew, and that its earliest characters were used by Abraham and Moses. The Syriac was divided into three dialects. First, the Aramean, or Syrian properly so called; which was spoken in Mesopotamia, by the inhabitants of Roha or Edessa, and Harran, and the outer Syria: second, the dialect of Palestine; spoken by the inhabitants of Damashk, Mount Libanus, and the Inner Syria: and the third, the Chaldean or Nabathean dialect; spoken in the mountainous parts of Assyria, and in the villages of Irak or Babylonia. The first of these was the most elegant, and

the latter the most rude. In the sixth century after Christ, the Syrians had carried the Christian religion into China, in the reign of the Emperor Taitcom; as in 1625, a large fragment of marble was found at a small village near Sighanfou in the province of Chensi, which contained an account of the Syrian Missionaries success, from the time of their entering the country till the year 782, when the inscription was written. The letters were engraved in the Stranghelo character, and round the margin were the signatures of sixty-six Syrian priests, and also of one Adam, to whom was given the title of Vicar-General, and Papal Deputy of Tsinestan, or the Kingdom of China, which is denominated Tsin by the Orientals. The Syriac language is written from the right to the left, although Duret quotes a Latin verse, to prove that the Syrians wrote from the top of the page downward, like the Chinese and the Mantchou Tartars. The names of the twenty-two letters of the Syrian Alphabet differ but little from those of the Hebrew; they are also used for numerals, in the ordinary way, as far as *Tzodde*, and then are extended in the following manner. *Youd*, with a point above it, signifies 100; while *Koph*, *Lomadh*, *Mim*, *Noun*, *Semkath*, *Ee*, *Phe*, and *Tzodde* or *Ssodhe*, similarly marked, express 200, 300, 400, 500, 600, 700, 800, and 900. *Olaph*, with a sign below it, like the French grave accent, stands for 1000, and *Beth*, with the same mark, for 2000. *Olaph*, with an horizontal line beneath it, is equal to 10,000; *Youd*, also underlined, makes 100,000; and *Koph*, thus distinguished, is one million. Again, *Olaph* with a mark similar to a circumflex put under it, specifies, ten millions; under *Beth* it makes twenty millions, and so continues through the alphabet. The Syriac is not spoken at the present time, as the common language of the Syrians and Maronites is Arabic; although the Syriac, like the Latin language in Europe, is used for their religious services and their sacred writings. When the Syrians would write any thing to be concealed from the Turks, they use the Arabic tongue and the Syriac characters; and as the former language has six letters more than the latter, they add a point to their own *Tav*, *Koph*, *Dolath*, *Ssodhe*, *Tteth*, and *Ee*, to stand for the Arabian *Thse*, *Cha*, *Dhsul*, *Dad*, *Da*, and *Gain*. The Syriac is also the learned tongue of the Christians of St. Thomas in India; and some of their books which contain certain of the spurious Gospels, are written in a beautiful hand, and with as pure a dialect as that used in the Syriac version of the *New Testament*. The Syrians yet call their vowel points, by the names of *Abrohom*, *Eschaia*, *Odom*, and *Ouriah*. The following is an ancient Syriac alphabet, which, according to Duret, consists of the small letters only, invented for running characters,

on account of the facility with which they might be traced. These, he also hints, were written from the top of the paper to the bottom.



Duret has given a curious account of the application of the Syrian alphabet to a religious purpose, by forming words expressive of the names and attributes of God, commencing with each letter of it; and after these invocations, the petition of the person praying is added. The following is the way in which the characters compose these addresses to the Almighty. *Olaph*, A, *Aloho*, God. *Beth*, B, *Baruio*, the Creator. *Gomal*, G, *Gaboro*, Powerful. *Dolath*, D, *Daiono*, Judge. *He*, H, *Hadoi*, the Meek. *Vau*, V, *Vagdo*, the Promise. *Zain*, Z, *Zaiono*, the Nourisher. *Hheth*, Hh, *Hhanono*, Merciful. *Teth*, T, *Tobo*, Good. *Iudi*, I, *Iohabo*, Bounteous. *Coph*, C, *Cino*, Righteous. *Lomad*, L, *Lmino*, Peaceful. *Mim*, M, *Morio*, Lord. *Nun*, N, *Nuhero*, Enlightener. *Somchath*, S, *Sabro*, Hope. *Gain*, G. *Gabado*, Governor *Phe*, Ph, *Pharuquo*, Saviour. *Zsodde*, Zz, *Zcibo*, Crucified. *Quoph*, Q, *Quadiso*, Holy. *Ris*, R, *Romo*, Most High. *Schin*, Sc. *Sbihho*, Glorious. *Thau*, Th, *Thlithoiutho*, Trinity. The following are the medial and final letters of a large modern Syriac in present use.



In reading the Syriac language without points, no letter is silent; but each character preserves in general its own simple English sound. The vowels are, divided into two classes, open and close: of the former are *Olaph, He, Vauo, Jud,* and *Eee;* and the latter are those which are not expressed in writing. The consonants are to be sounded according to the English power of the respective letters, as shewn in the ensuing table of the modern Syriac; with the following regulations. *Gomal* and *Koph* are uniformly pronounced with the hard sound of the English *G,* and *C,* as in *Gedeph, Kether, Cheth,* is sounded by some as a guttural *Ch,* or *Gh,* as in the Scottish word, *Loch;* and *Theth, Shemcath* as *T,* and *S,* unaspirated. *Phe* and *Sin,* on the contrary, instead of having only the simple powers of *P,* and *S,* are by some grammarians considered as aspirates, and the words in which they occur pronounced accordingly. It seems difficult to divide Syriac words into syllables, on account of the omission of the close vowels; but the following general rules will render it more easy. Words composed of two letters, or two consonants with a vowel between them, are to be considered as monosyllables. Words of three consonants, two consonants with a vowel prefixed or subjoined, or one consonant with two vowels prefixed or subjoined, are dissyllables Words not of either of the above classes, may generally be divided into two syllables. Words containing a vowel in the middle, readily separate into three syllables, as well as those which have several vowels or consonants in the same place. Syriac words are usually accented on the last syllable but one, unless they be increased by a grammatical change, in which case the accent falls upon the additional syllable. In the annexed alphabet and table all the forms of the modern Syriac letters are shewn, together with their power, both as numerals and as it respects the English letters.

Modern Syriac Alphabet.

Names	Initial	Medial	Final Connect.	Final Non-Con.	Power	Numbers
Olaph...	ܐ	ܐ	ܐ	ܐ	a	1
Beth....	ܒ	ܒ	ܒ	ܒ	b	2
Gomal...	ܓ	ܓ	ܓ	ܓ	g	3
Dolath ..	ܕ	ܕ	ܕ	ܕ	d	4
He.....	ܗ	ܗ	ܗ	ܗ	e	5
Vaw.....	ܘ	ܘ	ܘ	ܘ	u	6
Zain	ܙ	ܙ	ܙ	ܙ	z	7
Cheth...	ܚ	ܚ	ܚ	ܚ	h	8
Theth...	ܛ	ܛ	ܛ	ܛ	th	9
Jud.....	ܝ	ܝ	ܝ	ܝ	i	10
Coph....	ܟ	ܟ	ܟ	ܟ	c	20
Lomad ..	ܠ	ܠ	ܠ	ܠ	l	30
Mim	ܡ	ܡ	ܡ	ܡ	m	40
Nun.....	ܢ	ܢ	ܢ	ܢ	n	50
Shemcath	ܫ	ܫ	ܫ	ܫ	sh	60
Ee.....	ܥ	ܥ	ܥ	ܥ	o	70
Phe.....	ܦ	ܦ	ܦ	ܦ	ph	80
Tsode...	ܨ	ܨ	ܨ	ܨ	ts	90
Koph....	ܩ	ܩ	ܩ	ܩ	kh	
Rish	ܪ	ܪ	ܪ	ܪ	r	
Sin.....	ܣ	ܣ	ܣ	ܣ	s	
Tau.....	ܬ	ܬ	ܬ	ܬ	t	

The following Double Letters are used in the Syriac; viz.

ܠܠ for ܐܠ used at the beginning and in the middle of words.

ܠܠ for ܠܐ used in the middle of words..

ܠܠ for ܠܠ used at the end of words.

ܠܐ for ܠܐ used in all places.

The Vowels are expressed by Points, placed either over or under the Letters:

Petock..(*a*) ܒܳ or ܒܰ	Zekoph.(*o*) ܒܳ .. ܒܳ
Rebotz.(*e*) ܒܶ .. ܒܶ	Eztotz..(*u*) ܒܽ .. ܒܽ
Chebotz (*i*) ܒܺ .. ܒܺ	

The following letters are very similar in form, though different characters: viz.

a	*z*	*b*	*c*	*p*	*l*	*e*	*d*	*r*	*d*	*r*
ܐ	ܙ	ܒ̈	ܟ	ܦ	ܠ	ܥ	ܕ	ܪ	ܕ	ܪ
v	*k*	*j*	*sh*		*l*	*e*				
ܘ	ܩ	ܝ	ܫ		ܠ	ܥ				

The *ribbui*, ̈ placed over a letter; thus, ܒ̈ denote such word to be in the plural number.

The following are the Stops used in the Syriac language—

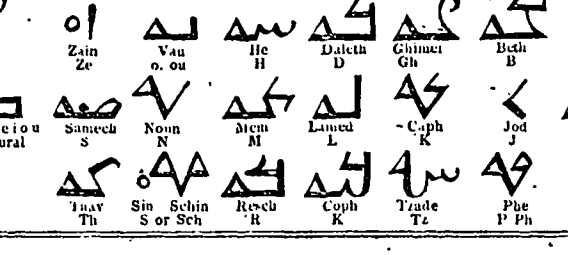
. : : ⁘ : which answer to our , ; : . x ?

1742, 4to.: *Lexicon Syriacum, by Edmund Castell*, Gottingen, 1788, 4to.: and *An Introduction to Syriac Grammar, by the Rev. Frederick Nolan*, Lond. 1821, duodecimo.

The best works on the Syrian language, are *Nomenclator Syriacus, by John Baptist Ferrarius*, Rome, 1622, 4to.: *Lexicon Syriacum, by Charles Schaaf*, Leyden, 1717, 4to.: *Masclef's Hebrew, Chaldaic, and Syriac Grammar*, already mentioned: *Lexicon Syriacum, by Anthony Zanolini*, Patav.

SYRO-GALILEAN.

PROPERLY speaking, the alphabet thus denominated is an ancient Chaldean, which was principally used by some pretended Oriental Christians, who called themselves the Disciples of St. John the Baptist, and who were formerly known under the names of Charanians and Sabeans. They were to be found in great numbers in the City of Bassora and its environs, and they falsely gave it out, that they possessed certain books which they attributed to Adam, written in the Syro-Galilean character. The Sabean language is, properly speaking, taken from the Syriac; but it also contains many words transplanted from the Persian, and the ancient Chaldean. The religion of the Sabeans is not more pure than their language; as it is composed of the Idolatries of India, Judaism, and Mahometanism. The powers and forms of their Characters, which are read from the right to the left, are as follow---.



Another alphabet to which the epithet of Syro is attached, is the following, which was formerly much used by the Jews in Syria. The names of the characters are the same as the foregoing, and the language is read as before, from left to right.

Syro-Hebraic.

EGYPTIAN.

It is well known, that the earliest characters of the Egyptian Nation were the representations of animals, trees, plants, and various other figures either separated or in connection, by which they expressed their ideas, or preserved the memory of great events. There is considerable doubt to whom even this laborious and inefficient method of writing was indebted for an origin. Sanconiathon, an ancient Phenician author, of whose works Eusebius has preserved a fragment, relates that the God Thoor, which is Osiris, or Mercury Anubis, and Thot by a corruption of his name, invented the first Egyptian writing, with which he formed the Portraits of the Gods, and made these characters sacred in Egypt. To his portraits were added many significant emblems, by which the virtues and the great qualities of the persons represented were displayed to the eye. Although this invention was both rude and contracted in its powers, yet it certainly was carried in Egypt, to a much greater extent and perfection than in any other nation where it has been used. The pencil and pen soon succeeded the chisel, and art began to shew herself in the formation of these allegorical figures. These were

denominated Hieroglyphics; or Sacred Sculptures; and sometimes the Grammata, or the Letters and Portraits of the Gods.. Socrates, as cited by Plato, Diodorus Siculus, Cicero, Pliny, and many other ancient authors, attribute this method of writing to the same Prince as we have already mentioned, under the names of Memnon, Menes, Mercury, Hermes, Thot, Osiris, &c. It is not probable that a perfect analysis of these Hieroglyphics, nor indeed of the general characters so called, can now be exhibited to the world; but it is truly amazing, to witness the advancement which this abstruse science has made in the last and present centuries. The researches of Denon, Burckhardt, Salt, Belzoni, and the Egyptian Society, have reduced a large portion of the mass of Hieroglyphics into order; and we shall now proceed to abstract from their labours, a short account of the new classification of these arbitrary signs, before we give any specimens of the written letters of the Egyptians. Previous to commencing, it will not be improper to observe, that the etymons of the word Hieroglyphic, are significative of the origin which has already been attributed to those signs, as they consist of ἱερὸς, sacred, and γλύφω, to carve.

From the Pillar of Black Basalt, which was discovered by the French at Rosetta, and which contains fragments of three different species of inscriptions; it has been ascertained, that the sacred Hieroglyphics were not the same as those used for common purposes; which have been well distinguished by the Greek name Enchorial, which signifies the characters "of the Country." It is curious for those unacquainted with the art of Decyphering, to review the means by which a series of unknown characters is considered, analysed, and explained; and it will not be irrelevant to introduce our account of the Egyptian Hieroglyphics, by a detail of the methods by which arbitrary characters are translated into English. Although this study appears peculiarly abstract and difficult, yet the rules upon which it is founded are few in number, and easy in application. The first is, to select all the different characters from any given subject, and observe if they in any way agree with the number of letters in the English alphabet; whether by considering c, as k or s; i, as j; k, as q; u as v; &c. or in the ordinary manner. The characters which occur the most frequently, must next be separated from the secret writing; and from these another selection must be made, of those which are oftenest repeated again. By this process four of the vowels may be ascertained, viz. a, e, i, and o; of which e will be the most common, and the others will occur in their own regular proportion. The next particular to be observed is, the divison of the words;

and though it is customary with writing in Cypher or Hieroglyphics, as well as with many ancient languages, to continue the subject in one uninterrupted line; yet there is usually some point or sign interposed, to mark the ending of certain passages, and a character which repeatedly occurs, may often be considered as such. These, then, are the most important general rules for Decyphering; but the orthography, and genius of the language in which the subject is written, must always be well considered, together with every other circumstance of collateral information, which can be collected to enlighten it. The Decyphering of Hieroglyphics, is conducted upon a principle similar to the above; and M. A. J. S. de Sacy, in his "Lettre au Chapital sur l'Inscription Egyptienne du Monument trouvé à Rosette," Paris, 1802, Octavo, makes several curious remarks upon the plan which he pursued. From him and from several other eminent writers, upon this abstruse but interesting subject, the following observations have been compiled. In the year 1801, during the memorable Campaign in Egypt, the Scavans attached to the French Army, discovered in the ruins of Fort St. Julien, which stands near the mouth of the Nile, on the Rosetta branch, a large broken stone, of Black Basalt, having an inscription engraved upon it in three different kinds of characters; namely, the Sacred Hieroglyphics, the usual letters of the Country, or the Enchorial, and the Greek. After the Battle of Alexandria, on the 21st of March, it was covenanted, in the Answer to the 16th article of the Terms of Capitulation of that City, dated August the 30th, that "the Arabian Manuscripts, the Statues, and other collections which have been made for the French Republic, shall be considered as public property, and subject to the disposal of the Generals of the Combined Army." This answer occasioned perhaps more discussion, than any other contained in the Capitulation; as the French General asserted, that all the Monuments of Antiquity collected by the Egyptian Institute, were private property. Menou, who commanded the French Expedition, had selected the Rosetta Stone for himself; and, in consequence, it was carefully packed in soft cotton cloth, with a double matting. After much dispute on the subject, the Egyptian Antiquities were relinquished to Major General Turner, for Lord Hutchinson, who commanded the English Forces after the death of Sir Ralph Abercromby; and who, on his part, resigned the Insects and Animals collected by the Egyptian Institute, as the care which had been employed in preserving them, had made them in some degree private property. When the Arabian Manuscripts, and the various Antiquities had been ceded to the British; the French Army tore the covering

from off the Rosetta Stone, and threw it down upon its face, and the others were treated in a similar manner. At length, with considerable difficulty, the Rosetta Stone was safely removed from General Menou's house, to that of Major General Turner; from whence it was embarked on board the Egyptienne, a captured French Frigate, in which it arrived in England, in February, 1802. By permission of the Secretary of State, it remained for some time at the Apartments of the Society of Antiquaries, whence it was finally removed to the British Museum, where it is still preserved in the IX. Room of the Gallery of Antiquities, No. 38.

From this Stone, a large portion of the Egyptian learning of England has been acquired; inasmuch as the Greek inscription not only details its history, and translates the other two, but it also serves as a key for the identifying of various Hieroglyphics, as well as of the Enchorial characters. Although a considerable portion of the Hieroglyphic inscription, and apart of the Enchorial and the Greek are broken; yet enough remains for them to enlighten each other. M. de Sacy observes, that in translating these Hieroglyphics, a small group of characters which frequently occur in almost every line, is either some termination or some common particle, and assuch it must be considered, till, by the development of the larger members of the sentence, their true signification be found. It generally happens, that these characters stand for a copulative conjunction; such as and with, or else signify an union of what has gone before, with that which is to follow. The characters for King, Alexander, Ptolemy, Egypt, and Alexandria, were discovered by a similar process; and these general points gained, the intermediate passages may be supplied by a repetition of the same plan, taking Greek words of less and less importance, and comparing them with the Hieroglyphic, and Enchorial inscriptions, until all the vacancies were filled up. The Rosetta Stone, however, has not been the only guide to Egyptian Literature; but the discoveries made by it, have been considerably assisted by Egyptian Monuments in general, although more particularly by the Green Sarcophagus of Alexander, and the Zodiac from the Temple of Dendera. The former of these, is a Sarcophagus covered with Hieroglyphics, formed of a stone called by the French Breche Verte; which was discovered in the Mosque of St. Athanasius, at Alexandria, in the same Expedition as the Rosetta Stone. Till the French Army possessed themselves of Alexandria, this Sarcophagus was preserved with such caution, that only Mahometans were permitted to view it. After it passed into the hands of the French, which it did by their breaking open the doors of the Mosque, removing it from thence, and concealing it under the most miserable

rags in the hold of a shattered Hospital-ship; the history of its delivery to the British, closely resembles that of the Rosetta Stone. At one time, indeed, the Capitan Pacha, refused to resign it, having possession of the vessel in which it was placed. Monsieur le Roy, however, the Prefect Maritime, at length, took measures for the safe delivery of it to Major General Turner, by whom it was embarked with most of the other Egyptian Antiquities on board the Admiral, Sir Richard Bickerton's Ship; and after it had arrived in England, it was deposited in the British Museum. It is now preserved in that National Depository in the IX Room of the Gallery of Antiquities, No. 5. The Sarcophagus itself, is formed according to Professor Hailstone, of Egyptian Breccia, Syenite, or Green Porphyry. It measures, 10 feet 3½ inches in length, within; 5 feet 3½ inches wide at the head, which is circular; 4 feet 2½ inches at the feet, without; and ten inches in thickness. Egyptian tradition, well supported by historical evidence, shews that it was originally formed for the reception of the body of Alexander the Great; which was first buried at Babylon, where being embalmed, it was wrapt in a thin envelope, or Puelos of beaten gold; which was afterwards exchanged for a cover of glass. After it had lain two years at Babylon, it was removed to Memphis, and subsequently to Alexandria, his own City, where it was interred in a splendid Temenos, or Shrine. In the year 389, when the Christians destroyed all the Idols within the City, this interesting relict was also devastated, and the building which enclosed the Sarcophagus, was converted into a Christian Church, and dedicated to St, Athanasius. In 640, the Invasion and Conquest of Alexandria by the Saracens, again caused a change in the Shrine of the Hero; as it then became a Mosque, still, however, retaining its Christian name. For a long series of years, by the Nations of Arabia and of Egypt, and by a series of many eminent authors, from the 10th Century downwards, the tomb of Alexander has been admitted, recognised, and held sacred: added to which, the beauty and peculiarity of its decorations and materials, identify it as being the production of Egypt, of the time of Ptolemy Soter, and the same Coffin as Olympias, the Mother of Alexander, caused to be made for him of Egyptian Marble. The foregoing particulars concerning this invaluable Sarcophagus, have been extracted from a highly erudite and interesting work on the subject, entitled "The Tomb of Alexander, a Dissertation on the Sarcophagus brought from Alexandria, and now in the British Museum." By Edw. Dan, Clarke, L. L. D, *Cambridge*, 1805, *Quarto*.

Two other Egyptian Monuments, which have been already mentioned as having proved of considerable importance to Europe in the study and decyphering of Hieroglyphics; are the Planisphere and Zodiac, discovered by

Mons. V. Denon in the Great Temple of Dendera, or Tentyra, and copied in his "Voyage dans la Basse et la Haute Egypte, pendant les Campagnes du Général Bonaparte." *Paris*, 1802, Fol. Vol. II. Plates, 130, 131, 132. Dendera, anciently the large City of Tentyra, is a Town of Upper Egypt, situated at the edge of a small but fertile plain, about a mile from the left hand bank of the Nile, and 242 miles South of Cairo. Its Temple, magnificent even in ruins, is the first that the Egyptian Traveller discovers on ascending the Nile; it is 200 feet in length and 145 in breath, and has 180 windows, through each of which the Sun enters in rotation, and then returns in a retrograde direction. The front of the Temple is adorned with a beautiful cornice and frieze, covered with Hieroglyphics, over the centre of which is the winged globe; while the sides are decorated with compartments of sacrifices. In the front of the building is a massive portico, supported by 24 immense columns, in four rows, having circular shafts covered with Hieroglyphics, square capitals resembling Egyptian Temples supported by four human heads horned, and round foliated bases on square plinths. On the ceiling of this portico is the large Zodiac, partly carved and partly painted in natural colours, on a blue ground studded with yellow stars. The general design of the Zodiac is divided in two, and represents two female figures, which bend over the divisions, typical of Isis, or the year; with a winged globe placed against each, allusive to the Sun entering his course. Each band of the Zodiac is divided into two, by a broad line covered with smaller Hieroglyphics. On the upper division of the Zodiac, which is the broadest, are represented six of the Zodiacal Signs; and under them, in the second division of the top band, are 19 boats, each carrying a figure significative of some astronomical appearance; accompanied by an Egyptian inscription in a square. The Constellations and other Heavenly bodies were the Divinities of Egypt, and it was supposed that they performed their revolutions in boats. The other great band contains the six remaining Signs of the Zodiac; and on its lower division are 19 other boats, as before. The Rev. Samuel Henley, in his very instructive and highly erudite remarks on this Zodiac, published in the Monthly and Philosophical Magazines, says, that these boats signify the nineteen years of the Metonic, or Lunar Cycle, which contains 6940 days; after which, the New and Full Moons, and other Aspects, are supposed to return to the same day of the Julian Year. The smaller Zodiac, or rather Planisphere, is carved on the ceiling of a separate quadrangular apartment, on the East side of the Temple. It is of a circular form, and is supported by four human figures standing, and eight kneeling, who have hawks heads. M. Belzoni supposes, that this part of the Temple was built at a later

period than the rest, as nothing like it is seen any where else. The dissertations of Visconti and Henley have proved, in opposition to the infidel arguments of Ripaud, Petau, and Archer, that these Zodiacs are of the age of Augustus Cæsar; and that they were erected in the Julian Year 4695, which then regulated the Egyptian; twenty-four years before the actual birth of our Saviour, and twenty-eight years before the common Era. All this is confirmed by the following Greek inscription, over the outer or Southern portal of the Temple:---"On account of the Emperor Cæsar, God, the son of Jupiter, the Deliverer, when Publius Octavius being Governor, Marcus Claudius Posthumus Commander in Chief, and Tryphon General, the Deputies of the Metropolis consecrated, in virtue of the Law, the Propylæum to Isis, the greatest of Goddesses, and to the associated Gods on the Sacred Thoth." The Country of Egypt, had at that time become a Roman Province; and Augustus Cæsar, in the 31st Year of his age and the 725 year of Rome, ordained that the Egyptian Thoth should for ever commence on the 29th of August.

A great acquisition, however, of Egyptian knowledge is to be acquired from the researches of Signor Giovanni Belzoni; since he has not only brought many specimens of Hieroglyphical Paintings and Egyptian Antiquities to England, but he has also produced the most perfect resemblances in large coloured models, of parts which he was not able to bring away. Of his additions to Egyptian literature we shall confine ourselves to two: namely, the Head of the Little Memnon, and the Tomb of the Kings at Thebes. The Bust of the Little, or Young Memnon, at Thebes, being about to be sent to the British Museum, and Sig. Belzoni's route laying up the Nile, he proceeded to procure a firmann for his journey; when he was engaged to bring the statue back with him. This splendid bust is composed of a single block of Syenite, the upper part of which is chiefly red, and the lower terminates in a broad lead-coloured vein which runs in a decreasing line up the back to the top. It weighs twelve tons, and measures ten feet in height, from the breast to the top of the head. "This head," says the Philosophical Magazine, "which the French were unable to remove even after blowing off with gunpowder a portion of the back part, M. Belzoni, by the assistance solely of the native peasantry, without the aid of any machine, succeeded in removing from Thebes to Alexandria. The chief difficulty lay in transporting it from Thebes to the Nile, to get it on board a vessel for Alexandria. This labour required a degree of patience and perseverance which few men possess: it took him six months, though the distance to the Nile was only about two miles." It reached England in the Summer of 1816,

and is now placed on a pedestal in the British Museum, Room IX. No. 11. From the proportions of the head, it is concluded that the figure to which it belonged was, when perfect, about 20 feet in height. The head, as already mentioned, has suffered the loss of the right side of the skull, but the features are entirely sharp and perfect, and are of a beautiful smiling character, partaking more of the Grecian than of the Egyptian models. The face is that of a young and handsome person, with a long square beard, and a closed mouth; but the red colour of the stone at this part, gives to the bust a singularly pleasing appearance. The back of the figure is carved with a broad band, upon which are several particularly fine Hieroglyphics, as they are sculptured of so large a size, and with so great a degree of care, as render them extremely valuable to Egyptian Literature. It was from these Hieroglyphics, that Dr. Young concluded, that this was the bust of a Young Memnon; but it is not that which uttered musical sounds at the rising of the Sun. It was brought by Sig. Belzoni from the ruins of the Memnonium in Thebes; where it must have lain many centuries amidst the fragments of that Palace, which Cambyses, King of Persia, destroyed 525 years before the Birth of Christ.

The Tombs of the Kings at Thebes, as discovered and displayed by Sig. Belzoni, have proved another valuable source of information, with respect to Egyptian Literature, History, and Hieroglyphics. We shall now proceed to give a particular abstract of his account of the Tomb of King Psammuthis, as it is given in his very valuable and amusing work, entitled a "Narrative of the Operations and Recent Discoveries within the Pyramids, Temples, Tombs, and Excavations, in Egypt and Nubia." London, 1820, 4to.; and the Series of Illustrations in Folio. These Tombs were situated in the Sacred Valley of Beban el Malook, which commences at Gournou in Upper Egypt, inclining South-West, and gradually turns due South. It is divided into two principal branches; one of which extends two miles towards the West, which place its extremity at the distance of five miles from the Nile River. The other branch, in which by far the greater number of tombs are situate, is parted from Gournou by a high ridge of rocks, which however can be crossed from Thebes within an hour. The sacred burial ground is also surrounded by rocks, and it can be entered only by crossing the rude paths which lead over the mountains, or by a single natural entrance, shaped like a gateway. The rock itself, out of which the Tombs are formed, is of hard calcareous stone of exquisite whiteness. About 12 o'clock, on the 18th of October, 1818, Sig. Belzoni entered the grand Tomb of King Psammuthis; which was situated at the foot of a steep hill, under a torrent,

which pours down with great fury in the rainy seasons. Although he had previously made several discoveries of Sepulchres, yet none were in any degree to be compared with that, either for beauty or interest. Eighteen feet below the surface of the earth appeared the entrance to the Tomb, which was considerably obstructed by large stones; but which, after the labour of another hour, were sufficiently removed to allow of a passage into the first corridore. Immediately within this passage, which was about 36 feet in length, and nearly 9 in width, were two figures as large as life; one of which appeared to represent the hero entering the Tomb, and the other a Deity with a hawk's head, on which were traced the globe and serpent, receiving him. Both of these figures were surrounded by Hieroglyphics; and some distance from them, nearer the ground, was sculptured the form of a crocodile. The remainder of both the walls were also covered with characters and Hieroglyphics, written in columns, separated by perpendicular lines; which circumstance led Sig. Belzoni to suppose, that the Egyptians read from top to bottom. On the ceiling of this passage was painted an eagle, with wide spread wings, with the corn-measure and two feathers on his head, holding in each claw a party-coloured feather, issuing out of a sceptre, and a signet-ring. Above the eagle were some smaller figures, such as the semi-globe, two sistri, the sacred hatchet, and two names placed within the usual annulus or ring. The ground of this painting was dark blue; the eagle's figure was party-coloured, red, white, and black; and the smaller Hieroglyphics were white and yellow. At the end of the first passage, was a staircase cut out of the rock, 23 feet in length, of about the same width as the corridore; having a niche on each side, and adorned with figures, with human bodies and heads of various animals. At the foot of the stairs was a door, on either side of which was a kneeling female figure, with her hands upon a globe, and over each of them a fox, which was usually placed by the Egyptians to watch the doors of Sepulchres. Above the door were two names, encircled with annuli; and supported on either side by two kneeling genii, holding the keys of the Nile, whose wings spread above the names. Through the door appeared a second passage of 37 feet in length, on the right of which was delineated a Funeral Procession, seemingly in the act of taking the Sarcophagus down into the Tomb, attended by a boat with male and female figures, and the Egyptian bier with the Ram's head, drawn by men. On the left side were similar processions, in which was introduced the sacred scarabæus, or beetle, drawn on a medallion elevated in the air. At the end of the second corridore, a pit or well of fourteen feet across, and thirty in

depth, seemed to stop all farther progress. The wall, on the upper part, was decorated with coloured figures nearly the size of life, which appeared to represent several deities, some of which were receiving offerings from various persons. In this pit, supposed to have been formed for the reception of the water, occasioned by the mountain rains running into the different passages, which have all an inclination downwards, were suspended a rope and a wooden beam, that had formerly been used in crossing the chasm, but which fell into dust upon being touched. On the opposite side of the pit was a wall, apparently terminating the tomb, as it was plastered and painted similar to the other; but in it was broken an aperture of about 3 feet square. On the 19th, the day following the discovery of the tomb, means were provided for crossing the pit, and entering the aperture, when beyond it was discovered a most splendid Hall, 27 feet 6 inches, by 25 feet 10 inches, supported by four pillars, each of which measured 3 feet square. On every side of these pillars were painted two figures in dark red, with white, and sometimes variously coloured dresses; and these represent, in general, a male and a female deity. On the right-hand wall were three tiers of men drawing a chain, one end of which is attached to a standing mummy; and in the two lower were funeral processions, with a row of mummies placed on biers. On the left was a military procession advancing towards a large figure; and behind them were three different species of people, evidently Jews, Ethiopians, and Persians, with some Egyptians, followed by a hawk-headed figure with a staff. It was from this procession, combined with the other Hieroglyphics, that Dr. Thomas Young discovered the names of two heroes, for whom, in all probability, this tomb was built; namely, those of Nichao and Psammuthis his son. Nichao, Nechus, or Pharoah-Necho, was the son and successor of Psammitichus; and reigned 1732 years after the Universal Deluge, or 616 years before the Birth of Christ. Early in his reign, about the Julian year 4104, he commenced the stupendous labour of endeavouring to cut a canal from the Nile to the Red Sea; a distance of about 120 miles at the narrowest part, and in some places more than double that space: but after losing 12,0000 men in the work, he yielded to the command of an oracle, which stated that a barbarian or foreigner should finish it. When Nichao ceased from this labour, he turned his thoughts to war; and, after building two large fleets of gallies, in the year 604 before Christ, he employed the best Phenician mariners he could procure, to coast along the African shores, and thus affected the Empire of the Seas. While his navies were so employed, before Christ 610, Nichao is said to have made war upon the Medes and Ba-

bylonians; but the Scriptures state, II. Kings, chap. xxiii. v. 29. that he went out to fight with Sarac, or Sardanapalus, King of Assyria, who was then on the River Euphrates. In his march through Canaan, from Egypt towards Babylon, Nichao was opposed by Josiah, King of Judah. The design of Nichao was to besiege Carchemish, a large City which stood on the borders of Syria, and on the banks of the Euphrates, to the North of Jerusalem. In the II. Chronicles, chap. xxxv. v. 21. it is stated, that in consequence of Josiah's opposition, that Nichao "sent ambassadors to him, saying, What have I to do with thee, thou King of Judah? I come not against thee this day, but against the house wherewith I have made war: for God commanded me to make haste: forbear thee from meddling with God, who is with me, that he destroy thee not." Josiah, however, listened not to Nichao; and the result was, that the Jewish and Egyptian Armies met in the spring-time, in the valley of Megiddo, which lay about 40 miles North of Jerusalem, where Josiah was mortally wounded, and Nichao continued on his march. Having arrived at Carchemish, he took the City, and having garrisoned it with his own troops, was returning towards Egypt, when he heard that Jehoahaz had assumed the crown of Judah. After a reign of only three months, Nichao commanded Josiah to meet him at Riblah in Syria; a town about 130 miles to the North-east of Damascus. As Nichao had already acquired considerable power over the Jewish forces and Nation, Jehoahaz met him there, when he sent him bound into Egypt, placed his brother Eliakim on the throne, and "put the land to a tribute of an hundred talents of silver, and a talent of gold." About the year 607 before Christ, Nebuchadrezzar, King of Babylon, marched with the intention of recovering the Syrian and Phenician Provinces, and expelling the Egyptians from Carchemish. Nichao, however, advanced towards the Euphrates with a powerful army, and a dreadful conflict took place, in which the latter was defeated with terrible slaughter, and the loss of all Syria and Judea, up to the city of Pelusium, which stood on the banks of the Mediterranean Sea, or the River of Egypt, in the Lower division of that Country. After this overthrow Nichao never quitted his kingdom, although he entered into a compact with Jehoiakim, as if he would have renewed his own war against Nebuchadrezzar, and have supported the Jews in opposing him. Nichao reigned 16 years over Egypt, and died about the year 600 before Christ, leaving Psammis, or Psammuthis his son, to succeed him. Of this Prince little more is recorded than that he reigned six years, and died in an expedition against the Ethiopians. Such are the memoirs of the two celebrated Sovereigns for whom the

splendid Tomb, discovered by Sig. Belzoni, was erected; since the processions of captive Jews, Persians, and Ethiopians, completely coincide with the above histories. To return to the Tomb. On the wall opposite the entrance of the last-mentioned Hall, was one of the most beautiful pieces of composition which perhaps was ever produced by the Egyptians. It consisted of four human figures of the size of life, representing Osiris seated on his throne, holding the flail and reaping-hook, with an azure face, and the corn-measure and feathers upon his head, receiving the homage of Psammuthis, introduced to him by Anueris, the Egyptian Apollo, a hawk-headed Deity. Behind the throne was a female, apparently the Goddess Buto, in attendance upon Osiris. The whole group was surrounded by Hieroglyphics, and enclosed in a frame richly adorned with symbolical figures, consisting of the winged globe, a line of serpents, and a multitude of smaller Hieroglyphics. On one side of this sumptuous painting was a large door, from which three steps led down into another chamber, measuring 28 feet 2 inches, by 25 feet 10 inches, supported by two pillars, which were 3 feet 10 inches square. Both the walls and pillars were covered with figures of men, women, and animals, intended to represent the actions of the Hero of the Tomb, although executed only in outline. This chamber is principally interesting on account of the discoveries it has made of the process used in Egyptian sculpture; as it appears from the figures it contains, that the ground was first made perfectly fair, equal, and smooth; and that then first sketches of the intended subject were traced upon it in red lines. A second artist next passed over them with black, amending the outline, and the sculptor then proceeded to cut away the ground about the figure, leaving it standing in basso relevo, from about the height of half an inch or less, according to the size of the figure. The garments and limbs were delineated by a narrow line about the eighth of an inch in depth, and all the angles were carefully rounded off. After the sculptor had finished, a layer of the most beautiful white was passed over all, and the figures were then stained with their respective colours. On the left hand side of the first Hall, was a cavity in the ground, in which was a flight of 18 stairs leading to a passage 36 feet 6 inches long, by 6 feet 11 inches wide, at the entrance of which were two splendid figures of the size of life, representing Isis receiving the spirit of the Hero, covered with a transparent veil. On the wall to the left of this passage, was another figure of the size of life, representing the Hero himself, sitting on his throne, with a sceptre in his right hand, and having the other extended over an altar, loaded with an offering cut into slices, and standing in a solid mass. Above his head

was a vulture with expanded wings, holding a ring, and on the upper part of the walls, on either side, is the King's history, divided into several small compartments of nearly 2 feet square, containing groups of figures about 18 inches in height, in all of which Psammuthis was to be seen standing upon an heap of corn, receiving offerings from his soldiers. Beneath these compartments were Hieroglyphics, arranged in narrow perpendicular columns. At the end of this passage, a flight of 10 steps led to another, of about 6 feet in length, in which the memorial procession was continued, and on the right hand was delineated the sacrifice of a bull. Beyond the last passage appeared another, of about 17 feet square, ornamented with figures as large as life, and having the sides of the doors ornamented with female deities, Hieroglyphics, and the Lotus-flower, both in bud and full blossom, with the semi-globe and serpent above it. This was succeeded by the Great Hall, which was about 27 feet 9 inches, by 26 feet 10 inches, supported by 6 square pillars, on every side of which were painted two figures as large as life: while the walls were adorned with semi figures with dog's heads, the memorial procession, and a line of corses stretched upon biers. Over the door on the inside was a female figure with expanded wings. Upon each side of the Hall was a small cell, measuring about 10 feet by 8: that on the left containing various mummies and other figures, and that on the right, a cow of half the natural size, with several figures under it: the walls of each were also covered with Hieroglyphics. The Great Hall opened with a single step into the Large Vaulted Chamber, which measured 31 feet 10 inches, by 27 feet, where the body of the King was deposited. So magnificently was this Chamber adorned, that description will not convey any idea of its beauty. Lines of coloured serpents, throned figures, men dragging boats, genii, and winged globes ornamented the sides, while the ceiling, which had one grand arch, was painted blue, with rays and zodiacal groups and figures delineated upon it, in yellow. In the centre of this room, over a cavity containing a ruinous subterraneous staircase and passage, 300 feet long, which probably at a former period was another entrance to the Tomb, was the grand oriental Alabaster Sarcophagus, in which the remains of the King were placed. The cover was gone, but the fragments of it were discovered in digging at the first entrance. The Coffin itself was shaped like the modern ones, it measured 9 feet 5 inches in length, by 3 feet 7 inches in width; the thickness was 2 inches, and it was covered, both within and without, with several hundred small figures cut into the stone, about 1-16th of an inch in depth, coloured with a dark blue. It has since been brought to England, and is deposited in an Anti, Room at the British Museum, until

a place shall be prepared for it in the Egyptian Gallery. Although Sig. Belzoni supposes that this beautiful Sarcophagus was formed of White transparent Oriental Alabaster; yet Dr. Clarke, upon an examination of a fragment of the lid, discovers it to be Arragonite, a variety of Carbonite of Lime, never before discovered in pieces of equal magnitude. See Dr. Clarke's paper on Arragonite, in the "Annals of Philosophy," Vol. II. New Series, July 1821, p. 57, Art. x. The blue colour with which the Hieroglyphics are stained, has been discovered by the same admirable scholar and J. G. Children, Esq. of the British Museum, to be a frit or glass, which contained silica, copper, lime, and potassa; with the slightest mixture of iron. After it had been exposed to the action of the blowpipe, pulverisation, heating in a glass tube, and digestion in Muriatic and Nitric Acids, the residuum exhibited when dried, "a beautiful blue colour, not much inferior to the finest ultramarine, but somewhat deeper, and indistructible by a red heat." See "Annals of Philosophy," November 1821, p. 389, Art. vii. "On the nature of the Pigment in the Hieroglyphics on the Sarcophagus, from the Tomb of Psammis, By J. G. Children, Esq. F.R.S. &c. &c." On the right of the same apartment where the Sarcophagus was discovered, was a small empty unfinished chamber, roughly cut, and without any painting. On the opposite side appeared another room, measuring 25 feet 8 inches, by 22 feet 10 inches, supported by two square pillars, and having a projection like a sideboard, 3 feet in width all round. The pillars were three feet four inches square, and every part was painted with the same magnificence as the rest. At the farther end of the Great Vaulted Chamber, a large door opened into a short passage, which led into the last apartment, 48 feet 4 inches, by 17 feet 6 inches, partly covered with white plaster, but without any paintings, and supported by four square pillars, one of which was thrown down. In this chamber were discovered the embalmed mummy of a bull, and, scattered in different places, were several small wooden mummies embalmed in asphaltum. There were also some other figures of baked earth, coloured blue; and near the two small rooms in the Great Hall, were some wooden statues standing erect, 4 feet in height, with a circular hollow inside, as if intended to contain a roll of papyrus. Such is the description of the magnificent Tomb discovered by Sig. Belzoni, which measured 309 feet from the entrance to the end of the last Hall, which contained nine apartments, seven passages, and three flights of stairs. Before entirely quitting the subject of the Tomb, it may be observed, that although it has been attributed to Nichao II. and his son Psammis, yet some circumstances appear

which would support the conjecture* that it was erected for *Amasis*, who reigned in the year of the Flood 1779, or 569 previous to the Birth of Christ, and was King of Egypt, about six months before Cambyses, the Persian Monarch, conquered that country. It will be remembered, that, at the end of the second corridore, an aperture was found, where the opposite side of the pit had been built up; and this, it is assumed, was done whilst the wall was yet fresh, and the secret of the chambers beyond was yet in recollection. It is next alledged, that History affords no warrant for any hostility to be shewn by Cambyses towards the ashes of Psammuthis; but, that he disturbed the remains of Amasis, the following extract from the "Universal History" evidently demonstrates. "The Egyptians now felt the heavy pressure of conquest in a very extraordinary manner. They saw their late King Amasis, inhumanly taken out of his Tomb, cruelly mangled, and finally burnt." Vide "The Asiatic History to the Time of Alexander the Great." B. i. C. iii. p. 98, Univers. Hist. Edit. Lond. 1747, *octavo*. Supposing it to be the Tomb of Amasis, also accounts for the unfinished state of several of the chambers; which, it is then conjectured, might have been *hastily* closed on the arrival of Cambyses in Egypt. These, and several other arguments in favour of Amasis, are brought forward in the paper alluded to, but there are still two *points* upon which all agree; namely, that the Tomb was dilapidated by the Persians under Cambyses, or at least by the hands of an enemy who despised *both* the religion and nation of the Egyptians; and that its discovery has been of the utmost *importance* to the cultivation of Egyptian literature. Having thus given a concise account of the materials by which Hieroglyphical learning has been chiefly assisted, we now pass on to consider the nature and signification of the signs belonging to it.

The invention of Hieroglyphical writing has been attributed to two causes; the first of which has the erudite Kircher to support it, namely, that it was invented by the Egyptian Priests to conceal their knowledge of Arts, Sciences, and Religion; and the second, which is adopted by Warburton in his Essay upon Hieroglyphics, supposes that Kircher is under a general error, and that these symbols were invented merely as the first rude system of writing, which was afterwards exchanged for an alphabetical character. Both of these origins are disputed: firstly, by the common tradition, which we have mentioned at the commencement of this article, which assigns the earliest use of Hieroglyphics to Thoor, who traced with them the histories of the Heroes, or Gods of Egypt; and secondly, by a French work, entitled, "Dissertation sur L'Ecriture Hiéro-

* Vide the Gentlemans' Magazine, Oct. 1821, p. 288.

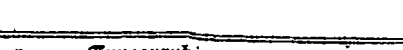
glyphique." Amsterdam, 1762, duodecimo. After citing the above hypotheses, the author says, "I shall not examine which of these two systems is the most probable: because I believe that both are very far removed from the truth. I believe that what have until now been taken for Hieroglyphics, have never been invented for the purposes of writing. I undertake to prove, that the figures which are called Hieroglyphics, were not invented for any other purpose than to serve as ornaments to the monuments upon which they are engraved. It is not that I assert, that all these figures have been simple ornaments: they shew of themselves, that some of them have been intended to mark some particular events; others to represent the Priests of some Divinity, as M. M. Shuckford believes was done in the Isis Table, or even the Deities themselves; almost as we see statues elevated on the portals of our own churches. But I maintain that they have not been intended to represent ideas." However the arguments of this author might have been received at the time he wrote, the discovery of the Rosetta Stone, has entirely cleared away the doubts which he expresses. From that it is clear, that the sacred characters of the Egyptians mentioned by Manetho, were a species of writing by symbolical representations, which were not common to the whole country. But the words of the Stone itself will best elucidate the matter. "And this decree shall be engraven on a hard stone, in Sacred Characters, in Common (enchorial) Characters, and in Greek; and placed in the first temples, the second temples, and the third temples, wherever may be the sacred image of the King whose life is for ever."

M. Champollion, in his "Memoir relating to an Alphabet of Phonetic Egyptian Hieroglyphics," communicated to the Royal Academy of Inscriptions and Belles Lettres, at Paris, on the 27th of September, 1822, defines and classes Egyptian writing according to the following rules. The MSS. and monuments which have remained to the present time, and more especially the inscriptions on the Rosetta Stone, have proved the use of three different species of characters for Egyptian records, namely:—

I. HIEROGLYPHIC WRITING, or that which directly represented ideas by figures, more or less perfect in their execution; and these also were of two kinds, viz.—

1. *Cyriological Hieroglyphics*, in which the figures were taken in a proper sense; as the image of a man was placed for a man, a crocodile stood for a crocodile, &c. But this species was also of two sorts, as—1.—*Pure Hieroglyphics*, or those which bore a representation of sensible objects, and which were delineated upon Palaces, Temples, Tombs, and Public Monuments in general.

An example of these may be seen in the ensuing cut:—

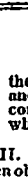


In these characters, the first on the left hand signifies Nile, and sometimes River, because the inhabitants of Egypt emphatically called the Nile, "the River." Kircher states, that the figure represents a Nilometer, or measure for ascertaining the height of the water. The second hieroglyphic stands for Country, and it is supposed to represent a cultivated field: it is remarkable that the Chinese character for the same thing is a square parted into four divisions. The third figure represents the wheel of a plough, and signifies Land. The fourth is expressive of a Temple, and it is thus explained. The square denotes an habitation, within which a seat or throne appears on the left hand, and above is the sacred hatchet, expressive of a God; so that it would read the House and Throne of the Deity. The fifth figure implies a Shrine; and Dr. Young states, that it was the most readily identified of all the hieroglyphics upon the Rosetta Stone. It probably represents an ornamented case, with one of the staves by which it was carried about, and is not unlike the Altar of the Tabernacle, used by Israel in the Wilderness, Exod. c. xxxviii. v. 1—7. "And he made the altar of burnt offering *of* shittim wood: five cubits was the length thereof, and five cubits the breadth thereof; *it was* four square; and three cubits the height thereof. And he made the horns thereof on the four corners of it; the horns thereof were of the same: and he overlaid it with brass. And he made all the vessels of the altar, the pots, and the shovels, and the basons, *and* the flesh hooks, and the firepans: all the vessels thereof made he *of* brass. And he made for the altar a brasen grate of net work under the compass thereof, beneath unto the midst of it. And he cast four rings for the four ends of the grate of brass, *to be* places for the staves. And he made the staves *of* shittim wood, and overlaid them with brass. And he put the staves into the rings on the sides of the altar, to bear it withal: he made the altar hollow with boards." The last hieroglyphic is indicative of Letters; and it may either depict an ancient pen and inkstand, or be more mystically put for the Papyrus rush and a Lotus flower, meaning the Learning of the Priests. ii.—*Linear Hieroglyphics* formed the second subdivision; and these were probably the origin of the sacred letters mentioned below, since they were composed of simple lines, bearing a rude representation of the images they typified.

2. *Tropical*, or *Enigmatical Hieroglyphics*, represented the subjects of an inscription by emblems; as the figures indicative of Splendid Land were symbolical of the country of Egypt, and the Serpent, which renews *his* skin, denoted Immortality.

One of the most perfect however, is the ensuing, of Osiris. Its abstract sig- is well expressed by the mouth, and a sceptre ter-

enigmatical hieroglyphics, which is the usual emblem nification is Power; which union of an ear, an eye, a minating in a forked point.



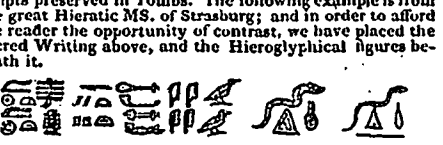
Honour is also expressed by a fenther or palm branch, thus shaped; and the epithet Illustrious, is thus composed of three hieroglyphics, which signify

Splendour

That

Bearing

II. HIERATIC, or SACERDOTAL WRITING, as it has already been observed, greatly resembled the Linear Hieroglyphics; since it consisted of arbitrary characters, bearing a distant resemblance to natural and artificial objects. It was, in fact, the images themselves reduced to a species of shorthand; and as it was especially consecrated to religious affairs, it is most commonly found in the Papyrus Manuscripts preserved in Tombs. The following example is from the great Hieratic MS. of Strasburg; and in order to afford the reader the opportunity of contrast, we have placed the Sacred Writing above, and the Hieroglyphical figures beneath it.



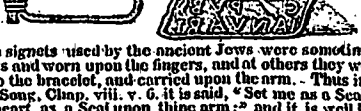
* The general signification of the foregoing, which, however, are not following passages, is supposed to be, Great Stability, Powerful, Good, Honourable; and the group to the right is expressive of Eternal Joy and Honour.

III. The third species of Egyptian writing was taken from the foregoing, and is still ruder in its delineation of figures, all appearance of which is sometimes wholly lost. It is denominated by Dr. Young, the ENCHORIAL, or Country character of the Egyptians; but M. Champollion calls it the DEMOTIC, or Popular Letter. It is also sometimes named the EPISTOLOGRAPHIC, and is usually accepted as the Running-hand of Egypt. The second inscription upon the Rosetta Stone is in this character, and an Alphabet of it, after M. Champollion, will be found upon page 847; immediately beneath which, are the names of Alexandria and Ptolemaeus, written in the same letters, which read from the right hand, to the dividing point in the centre.

Pure Hieroglyphics, may in general be divided into two grand classes, each of which however may again be subdivided into numerous minor classes; the careful study of which greatly facilitates the understanding of what may well be denominated an universal character, since, as a whole inscription is represented by things rather than letters, every one may consider them as they are called in their own language. The first of the larger classes, therefore, consists of Substantives in general; and the second of Particles. The subdivisions of the first are as follow: first,

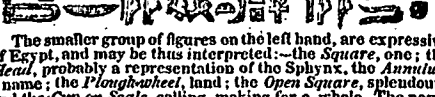
Names, as of Gods, Kings, Heroes, and Private Persons; which are represented by their respective Emblems, and these can never be understood till all the other subdivisions be well grounded in the memory. Secondly, Animals form another of the subdivisions; Thirdly, Inanimate Objects; Fourthly, Abstract Qualities, Titles of Honour, and Professions or Employments; Fifthly, Portions of Time, and Names of Festivals; Sixthly, Numbers; and Seventhly, Expressions for Sound. The Second grand class consists chiefly of Relatives, Prepositions, Conjunctions, and similar members of grammatical construction. It will now be proper to proceed to a brief consideration of the First Class in all its various divisions.

The proper names of Gods or Heroes, are, in Hieroglyphical writing, almost always depicted upon a tablet in the shape of a flattened oval affixed to a staff at the left hand side. The Greek inscription of the Rosetta stone, mentions a label called a Phylactery, upon which the name of a figure was usually distinguished; and with the Jews, a Phylactery was a little box, or a roll of the dressed skin of some clean animal, or of parchment, worn upon the forehead in front of the cap, or on the left arm, bearing one of the ensuing passages of Scripture written upon it. Exod. xiii. v. 9-16. v. 2-10. v. 11-14. Deut. vi. v. 4-9. xi. v. 13-21. Representations of the Jewish Phylacteries may be seen in Taylor's *Fragments to Calmet*, No. 234, but the ring or banner upon which an Egyptian name is inscribed, was certainly never taken from such an original, as it seems to bear a closer resemblance to an ancient Hebrew bracelet or signet, and its form appears to have been preserved in the stamps for wine-casks used by the Romans. The annexed cut exhibits a blank Egyptian annulus placed by the side of one of these stamps copied from the original in bronze, preserved in the Hamilton collection in the Gallery of Antiquities in the British Museum, Room XII. Case 55.



The signets used by the ancient Jews were sometimes set in rings and worn upon the fingers, and at others they were affixed to the bracelet, and carried upon the arm. Thus in Solomon's Song, Chap. viii. v. 6. it is said, "Set me as a Seal upon thine heart, as a Seal upon thine arm;" and it is well known that these seals contained the name or monogram of the wearer, for in the directions given to Moses concerning the Holy Breastplate, Exod. chap. xxviii. v. 9. 11, it is said, "And thou shalt take two onyx stones, and grave on them the names of the children of Israel."—"With the work of an engraver in stone, *like* the engravings of a signet, shalt thou engrave the two stones with the names of the children of Israel: thou shalt make them to be set in ouches of gold." Again, there is supposed to be an allusion to these engraved bracelet seals in Ge-

nesis xxxv. v. 4., which, from the description of them, must have borne a strong resemblance to the Egyptian Name-banners; since some commentators have conceived that "the strange gods" mentioned in the text were magical effigies or Hieroglyphics. "And they gave unto Jacob all the strange gods which *were* in their hands, and *all their* ear-rings which *were* in their ears; and Jacob hid them under the oak which *was* by Shechem." Perhaps too, there may be some connection between the Name-rings of Egypt, the Symbolon Xenikon of the Greeks, and the Tesserm Hospitalis of the Latins. In Greece these were formed of lead, and were of a circular shape; but in Rome they were made of stone of an oblong square, and upon them were inscribed the names of two parties between whom a firm friendship had been established. They were then divided into two parts, and interchanged, so that each one possessed that piece which contained the name of the other; and the production of this to either party upon a journey, ensured a hospitable reception and kind treatment to the traveller. The Hieroglyphics which are inscribed upon the Egyptian Name-tablets are all significative of attributes or circumstances; as in the instances given in the wood-cut below:



The smaller group of figures on the left hand, are expressive of Egypt, and may be thus interpreted:—the *Square*, one; the *Head*, probably a representation of the Sphynx, the *Annulus*, a name; the *Plough-wheel*, land; the *Open Square*, splendour; and the *Cup or Scale*, calling, making for a whole, The name of the splendid land called the Sphynx *Country*. The extensive line of Hieroglyphics appearing to the right, is taken, like the former, from the Rosetta inscription, and is there described within a Name-tablet for Ptolemy the Ever-living, dear to Phthah, or Vulcan. It has been thus explained:—The *Square*, *Semi-circle*, *Lion*, *Half-arch*, *Two Feathers*, and *Bent Line*, stand for Ptolemaios; the separate construction of whose name will be considered hereafter. The *Key of the Nile*, signifies life or living; the *Serpent*, eternal; the *Square block semi-circle and chain*, beloved by; the *Hieralpha, or Sacred A*, (which really represents a plough or hoe, the emblem of Phthah, the Egyptian Vulcan, who invented the instruments of War and Agriculture,) Phthah: the *Two Feathers*, honourable. The subject of names will be resumed, when we come to speak of the Phonetic characters, and the agreement between Hieroglyphics and the Enchorial letters of Egypt.

Animals, it has been already stated, form the second division of the first class of Pure Hieroglyphics; and these are generally rude representations of the creatures themselves, which are sometimes to be understood literally, and sometimes allegorically. A few examples will convey an idea of their nature.

A Man or person, is represented by a human figure *sitting on* the ground, holding one hand up and hanging the other down

behind him: this figure, however, is often inserted in phrases and names, when its signification cannot well be determined. A *new born child*, according to Plutarch, was indicative of the Rising Sun; a human figure also occurs as expressive of the title of Priest, in which case it is drawn kneeling, and in the act of pouring water from a vase, perhaps as a symbol of a religious libation: the hieroglyphic for libation, ceremony, and priesthood, are also nearly similar. A *Horned Snake* moving along, says Dr. Young, "is clearly meant, in some parts of the inscription of Rosetta, for Him, or It; although it has other senses in composition. It is very remarkable that the enchorial character, and that of the manuscripts resembling a *y* approaches extremely near to the Coptic *F*, which also means him; and Hof, or Hfo, is the Coptic term for a Snake; so that this coincidence seems to afford us another trace of the origin of the alphabet." Reasoning upon the same principle, we may notice that Plutarch, Sympos. lib. iv. states that the *Ibis*, when it set wide its legs, and placed its beak across them, formed an equilateral triangle; whence Kircher deduces the first Egyptian letter, *Alpha*, and nearly such to the present day is the form of the first character in the Coptic alphabet. One of the numerous significations of the *Scarabæus* or *Beetle*, was the Course of the Sun; since, say Clem. Alexandr. and Horap. when he has deposited his generating spawn in a mass formed of the ordure of beasts, he rolls it backwards with his feet, having his face turned from it, always looking to the East. In like manner too, the bodies of *Serpents* hieroglyphically indicated the oblique course of the stars; and Kircher would endeavour to affirm, that the Coptic letter Zida, was formed from the Serpent, to support which, he alters the word to Zeuda, or Life. Clement of Alexandria, already quoted, speaks of four golden images of Gods, which used to be carried in procession at a certain solemnity, namely, two *Dogs*, a *Hawk*, and an *Ibis*; and these were called four letters. Animals, or their parts, were also selected by the Egyptians to express the attributes of their Deities. Thus a *Serpent* or *Dragon* raising itself upon its tail, having rays about its head, and being surrounded by stars, implied Cnuphis, or the Good Genius. Osiris was typified by a *Hawk*, or by wearing a Hawk's head; and in his character of the Egyptian Bacchus, he wore the face of a *Bull*. Thoth, the supposed inventor of Hieroglyphics, was represented by an *Ibis*, perhaps in allusion to the circumstance mentioned above. Typhon had a *River-Horse* for his symbol; Anubis a *Dog*, or a Dog's head put for his own: Ioh, or the Moon, a *Cat*; Isis wore *Cows-horns*; and Apis and Mnouis, were *Black Bulls*, emblematical of Osiris. To mention, however, all the animals which were used by the Egyptians as attributes of their Gods, or allegorical in themselves, would be to reprint a catalogue of the Pantheon of Egypt, and the works of the earlier writers on Natural History; but a particular account of the symbolical properties of animals may be found in *The History of Four-footed Beasts and Serpents*, by Edw. Topsell, Lond. 1608, Folio, and considerable information relative to the histories and symbols of the Egyptian Deities, may be derived from *An Analysis of the Egyptian Mythology*, by J. C. Prichard, M. D. Lond. 1819, 8vo.

Inanimate Objects are considered by Dr. Young to form the next division of Hieroglyphical writing; but as many of these have already been introduced under the former heads, a very few remarks and instances will be sufficient to give an idea of their nature.

A *Star*, which is shaped with five points, is drawn in the Zodiacal inscriptions for a real star; but its tropical signification is an Attendant, or Ministering Spirit. An *Open Square* is the chief Hieroglyphic in the word Habitation, or Dwelling place; and in the Hebrew alphabet, the letter *Beth* literally signifies a House, because it was formed of three sides of a square, the shape of a Jewish building. "The character for an Image," says Dr. Young, in his *Egyptian Vocabulary*, "seems to mean a Wrought-man; the *Hands* connected with an *Eye* appear to be holding an *Oar* as an emblem of Labour." The Great Ritual contains a character formed of *a Vase placed under an Arch*, which has been interpreted to mean Gold; but sometimes it appears to be used in a symbolical sense, as if intended to express the Riches of a King.

Abstract Qualities, Titles of Honour, and Professions or Employments, form the next division of Hieroglyphical symbols, but these, it is evident, are never to be read in their literal signification.

Life, according to Lacroze, is represented by three limbs of a Cross patée issuing out of a circle, which emblem is denominated the *Crux Ansata*, or the Handled Cross, and sometimes the *Key of the Nile*. Dr. Young, though he admits this name and its explanation, asserts that it is not intended to be considered a water cock or faucet, as Lacroze imagined; whence he deduced the above signification from its turning on the Nile, and causing it to flow. Socrates and Rufinus state, that the Egyptian Priests explained the Cross to be an emblem of the Life to come: in conjunction with *a Serpent rising in an arch*, it signifies Everliving or Immortal, vide ante, page 338, in the Hieroglyphical name of Phthah. *A narrow altar composed of several stages*, stands on the Rosetta stone for Stability; and a reduplication of the Hieroglyphic makes the verb to Establish. *A circle* placed above *an Arm holding a part of a rudder*, signifies a Director; and the title of King is expressed by *a flowering plant followed by a singular insect somewhat like a wasp, and two semicircles*. Dr. Young observes, that the insect is probably intended for a Bee: as Amminanus Marcellinus remarks that a *Bee* was the Hieroglyphic for a *King*; and that Plutarch states that a Monarch was denoted by a *Leaf*. One of the principal figures in the word *Kingdom*, is *a pointed Oval*, representing a Diadem; and the term Sacerdotal is thought to be imaged by *a head-dress of Flowers* frequently found upon the heads of Priests. The act of Enlightening is sufficiently well expressed by *a Disk with descending Rays*; and that of Loving has already been shewn in the Hieroglyphical name of Phthah.

The fifth division of the first class of Hieroglyphical writing, consists of portions of Time and names of Festivals; and since it is evident that a particular examination

of the Egyptian Calendar cannot be given in this place, we must refer the reader to Dr. Young's very learned view of it in his article on Egypt, in the *Supplement to the Encyclopædia Britannica*, and the interesting essay *Concerning the ancient years, Æras, and Computations of Time*, in the Rev. J. Jackson's *Chronological Antiquities*. Lond. 1752. 4to. vol. ii. In the present place, a general view of the Egyptian months abstracted from those authorities is all that can be inserted.

The Egyptians year was anciently of several different kinds, as firstly, they are reported to have used a *Lunar year*, of one, two, three, four, or six months; and to this erroneous calculation many of the discrepancies in chronology are to be attributed: for in the history of the Kings of Egypt, some of them are said to have reigned 1000 or 1200 years. Secondly, they had their *Annus Canarius*, *Annus Cynicus*, *Heliacal*, *Sothic*, *Natural*, or *Canicular year*; which commenced at the time when Canicula, or the Dog star, was seen before the Sun's rising, and continued until the same aspect appeared again. This year consisted of 365 days, and every fourth year 366; and the season of its commencement was selected on account of the Nile being then at its greatest height, added to which, the Egyptians were wont to predict from the colour and appearance of the star,* the nature of the seasons in the ensuing year. As the real Canicular year was originally shorter than the true Solar one by about six hours, so in the course of time it commenced on every day of it; and when the cycle of 1460 years had been completed, it again returned to the same day and hour, which revolution was denominated the Great Egyptian Year, or Canicular Cycle. This year is supposed to have been first established about 1322 years before the Birth of Christ. About 576 years after the establishment of this Annus Cynicus, began the period which is denominated *the Epoch or Year of Nabonassar*; and which consisted of a Solar year of 365 days, divided into twelve months of 30 days each, with five intercalary days added at the end This was also like the last, an erratic or wandering year, and performed the same great cycle; but this mode of calculation was used until the defeat of Anthony and Cleopatra, (B. C. 30,) soon after which, as it is commonly imagined, the *Julian Year*, was established at Alexandria, B. C. 25, and the Emperor Augustus Cæsar ordained that the sacred Thoth, or first month, should commence for ever on the 29th of August. This Imperial decree was not, however, universally observed: the Egyptian Mathematicians and Astronomers used the year of Nabonassar until the time of Ptolemy in the second century after Christ; although the Coptic Christians appear to have adopted the reformed Calendar.

"The Egyptians," says Mr. Jackson, "are said to have first described the course of the Sun through the Zodiac, and to have given the names of Gods to the twelve signs: and both the Egyptian and Chaldean months were named from, or de-

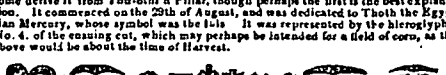
* If it appeared of a golden colour, it was considered as the sign of a fruitful year; but if it were dim or pale, the Egyptians imagined it to be an indication of scarcity.

dicated to their Deities. Hence, Thoth and Mesori were the names of the first and last Egyptian months; and Hesychius says, that Athyr, the month so called, signified a Cow, and therefore was denominated from Isis, whose symbol was a Cow."

A better idea of the Egyptian Months, will however be derived from the ensuing Calendar and Hieroglyphical signs, which belong to the fixed Alexandrine year.

EGYPTIAN CALENDAR.

Thoth, or *Thooth*, was the name of the first month in the Egyptian Calendar, and the word in the Coptic tongue literally signifies a congregation, or to meet; but some derive it from Thn-othi a Pillar, though perhaps the first is the best explanation. It commenced on the 29th of August, and was dedicated to Thoth the Egyptian Mercury, whose symbol was the Ibis. It was represented by the hieroglyphic No. 4. of the ensuing cut, which may perhaps be intended for a field of corn, as the above would be about the time of Harvest.



1 2 3 4 5 6

Phaophi, the second month, commenced on the 28th of September; and Dr. Prichard, in his Tabular View of the Egyptian Year, page 103, in the work already cited, says that it was the "time of sowing;" and that its festivals were the "Burial of Osiris, and the Pregnancy of Isis of Harpocrates," who was born when the green herbage first began to spring."

The third month was called *Athyr* or *Athor*, which began on the 28th of October, and which some have interpreted to have been an Egyptian name of Isis, signifying a Cow. On the seventeenth of this month, according to Plutarch, was celebrated the Aphanism or Disappearance of Osiris; when the Egyptian Priests covered a gilded cow for four successive days, with a pall of fine black linen, to represent the *grief* of his widow Isis, the *decrease* of the Nile, the cessation of the salutary Northern winds, the shortness of the days, and length of nights, and the desolate condition of the earth. In this month also was celebrated the Voyage of Isis to Phœnice.

Choiak was the fourth Egyptian month; it commenced on the 27th of Nov.

The fifth month was denominated *Tobi or Tybi*, and its beginning was upon the 27th of December. On the 7th day of this month, says Dr. Prichard, the Egyptians held a festival for the return of Isis from a voyage to Phœnice; and about the Hyemal Solstice, or Mid-Winter, was commemorated her search for the ark in which Typhon, the Evil Genius, had enclosed the living body of Osiris, and afterwards launched upon the Nile. The discovery of the remains of the Deity formed another festival, the exact date of which is unknown, but Plutarch, certainly in error, attributes it to the 19th of Athyr. He relates that on the night of that day, the Priests and their assistants went in procession to the sea-shore, bearing a sacred chest containing a small ark of gold, into which they poured fresh water, and shouted Osiris is found. They afterwards mixed fertile earth with the water, and adding spices and perfumes, formed a small image of a crescent form, which they dressed up and adorned. Perhaps the name of this month was formed from the Ark of Osiris, since Tobi is the Coptic word for a Receptacle. Isis, however, did not long retain the body of her husband; for having left him a remote place whilst she went to visit her son Horus, Typhon found it in hunting by moonlight, and *recognising the corse, he cut it into fourteen* pieces and scattered them over the *whole country*. On *her return, Isis went in search* of the fragments, over the *fenny parts* of Egypt, in a boat of papyrus, and recovered them all but one, which had been thrown into the Nile and devoured by certain fishes, that were ever afterwards held in abomination by the Egyptians.

The sixth month is *Mechir*, commencing on the 26th of January, and is hieroglyphically represented by No. 5 of the preceding cut. The equal division of the year seems hinted at in the number of arches which appear above the plants below, as

* *The Hieroglyphic for a Child or Infant, is probably an image of this young Divinity, who was considered as the God of Silence; it consists of a small human figure sitting down, holding one hand upon its mouth.*

they are only half so many as those given to the twelfth month, No. 6. It is possible that they might signify the Autumnal and Winter Solstices then past, and the figures beneath, the young state of vegetation in the spring one.

Pharmouthi, the seventh month, commenced on the 25th of February. At the new moon, the Egyptians celebrated the entrance of the soul of Osiris into that planet after its return from the shades, whence it was supposed to impart a vivifying principle to the lower world. This was the commencement of the Egyptian spring; and Plutarch supposed that the burial of Osiris represented, the sowing of the seed, and his resurrection, the springing up of the green herb, and this perhaps may receive some credit, when it is remembered that Osiris was adored as the Sun, because of its genial influence on the Earth and Nile.

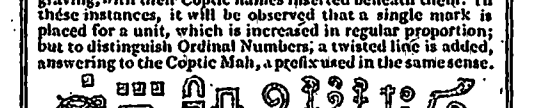
Pharmuthi, the eighth month, is supposed by Mr. Jackson, to have been derived from the name of the Goddess Thermuthis. It commenced on the 27th of March, and near the beginning was celebrated the *Lusia*, or the Purification of Isis, soon after the Vernal Equinox.

The ninth month, *Pachons*, began upon April the 26th; *Payni*, the tenth month, followed on the 26th of May; and *Epep*, the eleventh month, ceased on the 25th of June.

The twelfth month was called *Mesore*, *Mesori*, or *Mechir*; and it commenced on the 25th of July. It was dedicated to Harpocrates, the God of Silence and Mystery, and the offspring of Osiris and Isis, and its hieroglyphical symbol is shewn at No. 6, in the wood-cut on page 342 ante. The emblems which it presents, may perhaps be interpreted to mean the high cultivation of the land of Egypt in the summer; and the completion of the four great divisions of the year. The first of these may be intimated by the lower character which somewhat resembles a cultivated field, or the hieroglyphic for country, shewn on page 335, ante; and the latter may be indicated by the four crescents above. The former part of this interpretation receives some support, if it be remembered that Harpocrates is thought to typify the power of vegetation, and that the first fruits of leguminous plants were consecrated to him.

With regard to other periods of time, the wood-cut already referred to, exhibits the Hieroglyphics expressive of a Day, a Month, and a Year. The former of these is shewn at No. 3, and the characters literally signify the Splendour of the Sun; the circle being put as the sign of the planet, and the open square denotes its excellency. The progress of the Sun, however, was represented by the Egyptians, in various ways; since, as Dr. Prichard remarks from Macrobius, the Sun or the Day, was drawn under the figure of an infant at the Winter Solstice; during the year it was exhibited in the different stages of maturity; till, at the Brumal ingress, it was painted like old age. The Sun was also designated by a figure with wings of various colours, according as the emblem was a type of the planet in the upper or lower half of the Zodiac. If the former, his wings were of a brilliant hue; but in the latter they were represented of a dark blue. No. 2, consists of a group of Hieroglyphics appropriated to the word Month, but Horapollo states that it was expressed by a Palm branch or an inverted crescent. A Year, No. 1, is represented by a bent line somewhat resembling a plant with a shoot issuing from it; and the two characters on the left hand are usually found in connection with it. No. 7, in the block on page 344, represents the Hieroglyphic used for the first day of the month, called in the Coptic tongue Souni: and the signs for the first of the Sun, are sufficiently visible on the right hand, but the number was of course changeable: the other character signifies Good, or as Dr. Young interprets it New. No. 8, shews the Hieroglyphics indicative of Sou Map, or the 30th day of the month; and the same learned Egyptian Antiquary supposes the figure resembling a rising serpent to be the Tail of some animal, which, he adds is sufficiently expressive of the sense.

The *sixth* class of Hieroglyphical writing, consists of Numbers, several of which are exhibited in the following engraving, with their Coptic names inserted beneath them. In these instances, it will be observed that a *single* mark is placed for a unit, which is increased in regular proportion; but to distinguish Ordinal Numbers, a twisted line is added, answering to the Coptic Mah, a prefix used in the same sense.



Ouai. Ori. Sebomt Met, Metti. Sebo. Sebo. Sebo .7 9
One. Neop. Ten. 100. 1000. for
Heait Thrice. echo.
First. 1000.

Plurals are noted in sentences, by several dashes or units being placed after the Hieroglyphics to which they refer.

The seventh class of Hieroglyphic figures consists of grammatical particles for the connections of sentences; in the interpretation of which, their general connection and resemblance with the Enchorial alphabet of Egypt, is the best and principal guide, since it is evident, that neither in a literal, nor easily in a figurative sense, the representation of objects can supply the lesser members of a written passage. The nature of this division of the Egyptian symbols may be seen in Dr. Young's *Hieroglyphic Vocabulary*, but they could not eligibly be introduced in the present work.

All the foregoing Hieroglyphics and letters, however, were simply Idiographic; that is to say, they expressed things and actions, but were not significative of Sounds. M. Champollion conceived, from discovering that in the Rosetta inscription, many signs were useless or superfluous when interpreted according to their real value, that they must have been inserted as notes for pronunciation. These superfluous marks he particularly noticed in names, as in those of Alexander, Ptolemy, Queens Berenice, Arsinoë, and of private persons, Aütes, Pyrrha, Arëia, &c. The comparison of these names with each other fully demonstrated the existence of certain characters which were used to express the sounds of proper names, and of words foreign to the Egyptian tongue. M. Champollion denominated these characters the Phonetic, or the Sound Writing; and from the comparison of many names, as well in the Rosetta inscription, as in Papyrus manuscripts, he was enabled to make out the ensuing Syllabaire, in which the first column shews the Greek letters, the second the Demotic Egyptian, and the third the sacred Hieroglyphics. The mutilated state of the Rosetta stone, which contained only the last fourteen lines of the Hieroglyphic version of its inscription, prevented the collection of the series of Phonetic signs belonging to the sacred symbols; for it contained only the name of Ptolemy written in the usual cartouch, and com-

posed of seven or eight Hieroglyphical signs. One of the monuments, however, which M. Belzoni brought to London from the Isle of Philæ, has on its base a petition in Greek, from the Priests of Isis at that place, to King Ptolemy Evergetes II. and to the Queens Cleopatra his wife and sister. In the Hieroglyphical inscriptions which cover the four faces of this obelisk, M. Champollion discovered the Hieroglyphic name of the above monarch, figured precisely as it appeared upon the Rosetta Stone; and this led him to suppose that the other name-ring contained the word Cleopatra. A comparison between these names, in which some of the same letters occur, proved, by their containing the same Hieroglyphics, that there existed in the Hieroglyphic writing, a series of signs significative of sounds or pronunciations. A foundation for a Phonetico-Hieroglyphical alphabet being thus gained, it was increased and verified by applying the same rules for decyphering to other name-scrolls. One of the most singular discoveries made by this alphabet, is that of finding the names of Roman Emperors written in the Greek language with Hieroglyphical symbols, upon the temples of Philæ, Dendera, &c. The Egyptians, in the composition of their Phonetico-Hieroglyphical alphabet, seem to have adopted the representations of those objects, the names of which commenced with a vowel or consonant of the sound they required; but this will be better understood, by the following interpretation of the hieroglyphics forming M. Champollion's alphabet; premising, that the same characters are evidently represented several different ways.

A Abok, a Raven. Amria, a Parrot. Achom, an Eagle. Allos Noubai, the Pupil of the Eye. Amshe, a Workman, typified by the Arm. In some Coptic words there is an elision of the initial A, and by this omission some other interpretations of the Phonetic signs are furnished; as Bok, the Chenalopex, Sheldrake, or Egyptian Goose. Champollion calls two of the foregoing birds the Hawk and the Ibis. Bai, branches of the Palm.

B Berbi, a Patera. Bir, a Basket. Barbit, a Goat.

Γ This letter very rarely occurs in pure Egyptian words, and in the present Alphabet it is considered synonymous with K; but the signs in the annexed wood-cut are probably Kabi, a Lamp. Kallampho, a little Hill.

Δ The D, in the Alphabet of M. Champollion, has the same figures as T. vide below.

E The Feathers in the present instance may perhaps be put for the Coptic Erbin, the Papyrus Rush; Erto, a Cubit Palm, or Eschleloui, Exultation.

H As this letter is represented by almost the same emblems as the succeeding one, the interpretation of them will be found below, since few words of pure Egyptian commence with Hita.

I Jeb, an Ornament, synonymous with a Feather in hieroglyphical characters. Iope, Work or Labour, typified by the Arm.

K Kelol, Keloli, Knikidji, Kaiji, a Bason; or Kabi, a Lamp. Kallampho, a Little Hill. Koh nschot, a hard stone. Kalibi, Kot, a

Building. Klaft a Cowl. The Basilisk at the end of the line, stands probably for Kal, Wisdom.

L Lo, or Ole, a Lion. Laaoi, a Lioness. Libia, a Vase. Las, a Tongue.

M Power of M A, Merab, an Inkstand, vide the same figure on page 335 ante. Mhan, a Sepulchre.

N Nte, the genitive article. The jars are probably taken from the hieroglyphic for Gold, which consists of a Vase under an Arch; the Egyptian word is Noub. The Hat has the power of Nte.

Ξ Exi is considered as synonymous with Zida, Sima, or Schei.

O Ouctonot, Greenness, an Herb. Outah, Fruit. Ooolni, a Palm.

Π The Egyptian Bi, in this Alphabet, is considered as equivalent to Phi, Vide below.

P Ro, a Mouth. Hreri, a Flower. Roman, or Erman, a Pomegranate. Dr. Young adds to the second two, a circle open at the top. Rephschini, the Serpent Pythion.

Σ Os, or Osh, Great. Sebi, Pan's Syrinx or Pipe. Sloi, a Star. Sok, a Scrip. Skeo, a Scroll or Letter.

T Tot, a Hand. Ti or T, the feminine article: perhaps a representation of a breast reversed. Tori, a Mason's Level.

Φ Perhaps the first figure is put for Phorish, a Bed or Pavement: and the second for Peri, Food, under the form of an Egyptian Cake.

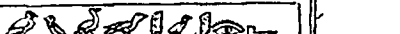
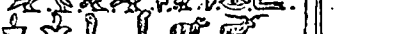
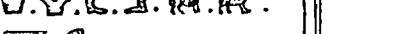
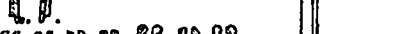
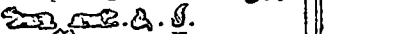
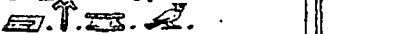
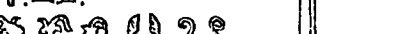
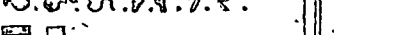
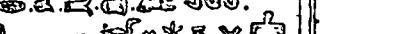
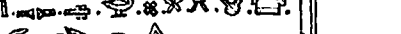
X Dr. Young, in his examination of this Alphabet, states that the Enchorial form of the Ch is not supported by any of the names which he has collected in the Demotic character.

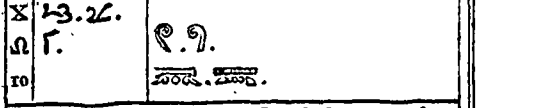
Ω The curved line used for the Coptic Au, may probably be a variation of the upright bent one expressive of Osh, Great. Power of TO.

All these explanations, however, can be considered only in the light of conjectures; some of them happy in their adaptation, and others destitute of support or probability. Dr. Young, in his *Account of some recent Discoveries in Hieroglyphical Literature, and Egyptian Antiquities*, Lond. 1823, 8vo. p. 48. a work replete with the most curious and interesting information,—expresses his thoughts that "Mr. Champollion has never been led, in any one instance, from the Egyptian name of an object, to infer the Phonetic interpretation, that is, the alphabetical power of its symbol: but the letters having once been ascertained, he has ransacked his memory or his dictionary for some name that he thought capable of being applied to the symbol: and not always, as it appears to me, in the most natural manner." The chief end of Dr. Young's studies, seems on the other hand, was not so much to discover the names and natures of Hieroglyphic symbols, as to institute a comparison between the forms of them, of the Enchorial characters, and of the Coptic word.

Beneath the cut which contains the foregoing alphabet, are given the names of Alexandria and Ptolemais, written in the Enchorial character, with the Phonetic Hieroglyphics. The former of these appears on the right hand of the central point, and its Hieroglyphics are contained in the third name-ring from the right. On the left of the centre point, is the name of Ptolemais in Egyptian Enchorial characters; and beneath, without an Annulus, also on the left, are the symbols belonging to it.

PHONETICO-HIEROGLYPHICAL ALPHABET OF M. CHAMPOLLION.

	ENCHORIAL.	PHONETIC HIEROGLYPHICS.
A	ⲁ, ⲁ, ⲁ.	
B	ⲃ, ⲃ.	
Γ	ⲅ, ⲅ, ⲅ.	
Δ	ⲇ, ⲇ, ⲇ.	
E	ⲉ, ⲉ.	
H	ⲏ, ⲏ, ⲏ, ⲏ	
I	ⲓ, ⲓ, ⲓ, ⲓ	
K	ⲕ, ⲕ, ⲕ.	
Λ	ⲗ, ⲗ, ⲗ.	
M	ⲙ, ⲙ.	
N	ⲛ, ⲛ, ⲛ, ⲛ.	
Ξ	ⲝ.	
O	ⲟ, ⲟ, ⲟ, ⲟ, ⲟ, ⲟ.	
Π	ⲡ, ⲡ, ⲡ, ⲡ.	
P	ⲣ, ⲣ, ⲣ, ⲣ.	
Σ	ⲥ, ⲥ, ⲥ, ⲥ, ⲥ.	
T	ⲧ, ⲧ, ⲧ, ⲧ.	
Φ	ⲫ.	
X	ⲭ.	
Ω	ⲱ.	
10		

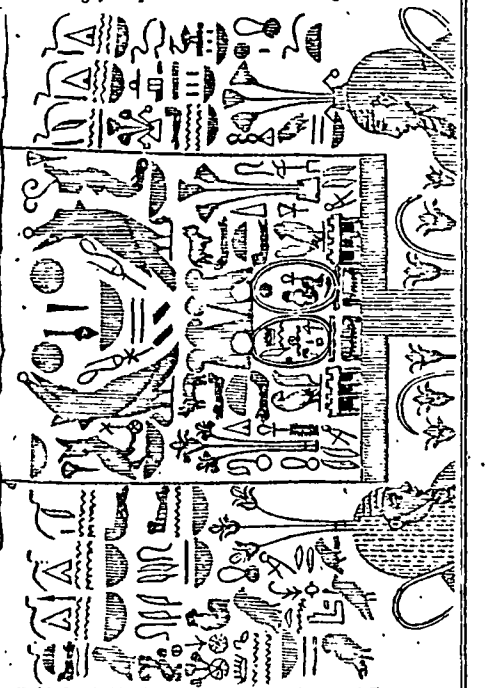


Upon these symbols, Dr. Young remarks, and the preceding alphabet will enable the reader to verify his assertions, that the square and semicircle answer to the letters P and T; the next figure a plant or herb, stands for O; the Lion is Lo, or Ole; the line beneath, Ma, or M; the two feathers, E or I: the bent line, Os, or Osh; makingtall together, Ptolemaios, or as it is sometimes written, both Enchorially and Hieroglyphically, Ptolemeus. The ring standing next to that of Ptolemy, contains the name of Alexandrus; the next is Cleopatra, and that nearest the right hand, is the title of Berenices: all which may be read by applying the signs to the foregoing alphabet. In writing these names however, according to M. Champollion's system of Phonetic Hieroglyphics, only the long vowels and diphthongs were inserted, as the short vowels were always supposed to be contained in the symbols themselves: thus the name last described, is, literally interpreted, spelled BRNIKS, with the feminine marks concluding the line, reading through the cartouche from left to right. For further information, see *Lettre à M. Dacier, relative à l'Alphabet des Hieroglyphiques Phonetiques*, by J. F. Champollion, Jun. Paris. 1822. 8vo.

Egyptian manuscripts were, for the most part, written upon the Papyrus rush, but M. Denon mentions some written upon linen. As most of them have been discovered in sepulchres, they have few marks of distinction; but the principal part of the text of each consists of a collection of Hymns, or Doxologies to certain Deities, expressed in the name of the deceased. Near the end of almost all the Papyrus MSS., observes Dr. Young, is a copy of a tablet of the Last Judgment, and at the upper part of each MS. is a series of graphic tablets, with columns or paragraphs of writing beneath them, having their first words commonly written in red. As the commencement of a manuscript forms the outside of a roll, it is seldom found entire; but a short distance from it there is usually a tablet, the whole depth of the paper, representing the sun adored by his ministering spirits.

Perhaps the period may never arrive, when the manuscripts and figured monuments of Egypt shall no longer be veiled in mystery; but scarcely half a century past, it was doubted whether the Hieroglyphical signs were really any other than appropriate ornaments used without any regard to a particular signification. M. Norden, when he discovered the colossal sitting statues on the plains of Carnac, engraved them, though seemingly with little hope of the tablets upon their chairs ever being decyphered; but now, be it said with gratitude to the labours of those whose works we have cited, we are enabled to distinguish the signification of many of those symbols. We discern in the great square shown in the opposite engraving, two name-rings, the left hand one evidently containing the name of Memnon, and the other apparently that of Tithous or Tithoes his father. We may also observe on each side of the great square at the top, the signs for Eternal Joy and Honour, and other phrases may be decyphered in various places.

Such, perhaps, is the explanation of the Hieroglyphics on this image, a representation of which is given below.

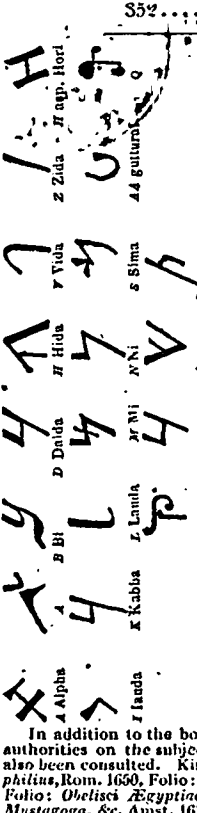


Fred. Louis Norden, from whose "Voyage d'Egypte et de Nubie," Copenhagen, 1755, Folio, Vol. II., Pages, 166-169, Plate cxi., the above engraving has been copied, thus describes the figure, its throne, and its situation. The Co-

lossal figures, one of the chairs of which bore the foregoing emblems, were not more than a league distant, from Carnac, if the traveller could have gone strait forward; but he found the country so intersected and cut up with canals, and covered with Turkish corn, that he was forced to make many turnings, and three hours were occupied before he arrived at the Colossal figures to make his drawings. The Statues stand facing the Nile, between the Cities of Luxxor and Carnac, on the East side of the river; the first seems to represent a man, and the other a woman, but they are both of the same immense magnitude, and they measured 50 Danish feet in height, from the bases of their pedestals, to the tops of their heads. They are sitting on cubical stones of nearly 15 feet square, at the two front corners of which are as many Isiacal figures placed for ornament, but the back is higher than the front by a foot and an half. The pedestals on which there is a single mutilated line of hieroglyphics, are each of them 5 feet high, 36 feet and an half in length, and 19 feet and an half in depth: the distance, between the statues is 21 paces (52½ feet). They are entirely formed of various blocks of grey sandy stone, which appear to have been drawn from some of the grottos, that are found in great numbers in the adjacent mountains. Their breasts and legs are covered with many Greek and Latin inscriptions, which were engraved in the time of the Romans, commemorating the names of those who heard the musical sounds emitted by the statue of the greater Memnon at the rising of the Sun. These inscriptions were similar to the following. "Clavdivs Maximvs of the xxii. Legion heard the sounds of the Memnon at the First Hour."—"In the v. year of Hadrian, Emperor of Thaterus, the Præfect Meros, heard the sounds of Memnon, the xiii March, at the first hour." The backs and sides of the chairs upon which these colossal figures are seated, are covered with Hieroglyphical designs and characters; which, although they greatly resemble the generality of such things, yet they also possess a peculiar form of their own; and beside these there is one on each side a table or terminus. The chairs are made of a single piece of stone, of the same sort as the rest, but they appear to be more brown and somewhat more hard. The two Isiacal figures, which as it has been already stated, ornament the corners of these chairs, are of a whiter and a finer-grained stone, and seem to have been added to the statues after they had been erected, as they have not that Egyptian character which is so evident in the rest. It remains only to be observed that the two figures whose heads appear in the lower part of the above engraving, are in bas-relief of the size of life.

According to the accounts of many of the before-

mentioned ancient writers, the Egyptian Monarch not only invented a series of characters, but also divided them into vowels and consonants, mutes and liquids; and brought the then uncultivated language under fixed rules, giving it harmony by his laws. In consequence of the utility of this invention, the Egyptian Prince was considered as God of Eloquence and Wisdom; and on that account received the name of Anubis, which signifies an eloquent man, an orator, or a prophet. It has been thought by some writers on this subject, that this Sovereign, the inventor of the learning of Egypt, was no other than Mesraim, the grandson of Noah, who is mentioned in Genesis, Chap x. v. 6. "and the sons of Ham; Cush, and Mizraim, and Phut, and Canaan." Mizraim became the founder and father of the Egyptians, and originally gave his name to their country, with respect to which it has three different acceptations. Firstly it signifies Egypt, both Upper and Lower; as in the second book of Kings, Chap. xix. v. 25 in the Chaldaic version, reads, "Hast thou not heard of old what I did to Pharghoh the King of Mizraim, nor that my power was exercised in them." *Biblia Sacra Polyglotta, à Briani Waltoni, et Lexicon Heptaglotton Edm. Castelli. Lond.* 1657-59. *Fol. Vol. II. p.* 600. In the preceding verse of the same chapter it is said, "I have digged and drank of strange waters," which the Rabbi-Kimchi, and other learned Interpreters explain to mean the waters of Mezor or Egypt, during the Captivity. Secondly, the word Mizraim signifies the original inhabitants or their descendants. The natives of that country, however, call it Chemi, which signifies the land of Ham or Cham; as in Psalm cv. v. 23, "Israel also came into Egypt, and Jacob sojourned in the land of Ham." Again, in Psalm cvi. v. 21-22. "They forgot God their Saviour, which had done great things in Egypt. Wondrous things in the land of Ham, and terrible things by the Red Sea." The name of the founder of Egypt, is not however now forgotten in the East; since the Arabs call Al Cahira, or Cairo, by the title of Mezer; and Memphis formerly bore a similar appellation. The following ancient alphabet was drawn by the Abbé Barthelemi from an inscription given by Carpentras, which is undoubtedly Egyptian, as the monument on which it occurs was found in Egypt and had never previously been decyphered. The letters are read like the English from left to right, and the names of the Coptic characters, where they agree, are placed beneath them, according to the usual custom of pronouncing a dead language by the assistance of its descendant living one; in the same manner as the names of the modern Chaldean characters are used for the old Samaritan and the Hebrew.



The ensuing series of characters varies from the foregoing, and from every other of his nation, by being read like the Hebrew from the right to the left.

In addition to the books already cited, the following authorities on the subject of Egyptian Antiquities, have also been consulted. Kircheri Athanasii, *Obeliscus Pamphilius*, Rom. 1650, Folio: *Œdipus Ægyptiacus*, Rom. 1652-4, Folio: *Obelisci Ægyptiaci, &c.* Rom. 1655, Folio: *Sphynx Mystagoga, &c.* Amst. 1676, Folio: *Horapollinis Hierogly-*

phica, Edit. by J. C. de Pauw, Traj. 1727. Quarto: *Pantheon Ægyptiorum*, by P. E. Jablonski, Frankf. 1780. Octavo: *Essai sur les Hieroglyphi*, Weimar, 1804, Quarto: *Ancient Alphabets and Hieroglyphics explained*, &c. translated from the Arabic by Joseph Hammer, Lond. 1806, Quarto: Appendix to Belzoni's Travels, Lond. 1820, Quarto: *Memoranda illustrative of the Tombs and Sepulchral Decorations of the Egyptians*, &c. Lond. 1822, Octavo: the article Egypt, in the Supplement to the *Encyclopedia Britannica*; Papers and Plates in the *Archæologia*.

ETHIOPIAN OR ABYSSINIAN.

Some authors, who have written on the origin of languages, have considered that the Ethiopian letters may lay claim to as ancient a derivation as the Egyptian. In the earlier part of the Bible, the Ethiopians are called the Chusites, because they sprung from Chus or Chut, the brother of Mesraim, the son of Ham, and the grandson of Noah. Bruce, in his *Travels to Discover the Source of the Nile, Edinburgh*, 1790, *Quarto, Vol. I. p.* 401, has a long dissertation to prove that the ancient Ethiopian letters were the invention of a Chusite shepherd; since they are denominated Geez, or the Language of the Shepherds. The Ethiopian tongue is, at the present time, almost superseded by the Amharic or Abyssinian; whose name is derived from the Province of Amhar, which is the principal in the Kingdom of Abyssinia. The ancient language was formerly denominated Lesan-ghaaz, or the Tongue of Study, and sometimes Lesan Matzhaph, or the Tongue of Books. That which is now used is called Lesan Neghus, the Royal Tongue, because it is spoken principally and most purely at the Court, different dialects prevailing in different parts of Ethiopia. About the middle of the 18th century, when the Abyssinians changed the language of the country, and the Zagué family was restored from their long retreat at Shoa, seven characters were added to the Alphabet. The ancient language is now used only for the religious and literary writings of the Abyssinians, the Royal Grants, and the historical records of the country. The Ethiopic or Abyssinian version of the Scriptures, which was made from the Alexandrian Greek, is still extant; and a very ancient example of it on vellum, is in the possession of the Church Missionary Society. The manuscript is written in a bold hand, and in double columns upon 282 folios; and the size of the pages is that of a large Quarto, but somewhat narrower. This valuable manuscript is now printing from an exact transcript, and with letters cast from the matrices formerly belonging to the eminent Ethiopian Scholar John Ludolph, which are preserved at Frankfort. It is sometimes said of this admirable scholar, that he spent

thirty years in acquiring the Ethiopian language; but it is more certainly known, that he was well versed in five and twenty other tongues. The Abyssinian language is read from the left hand to the right: and the Alphabet consists of twenty-six radical letters, but by varying the position of their points, they amount to 227, including the 29 numerals, 20 syllable abbreviations, and the changes of the additional seven letters. The plan which is followed to produce so many changes, although intricate at the first glance, is conducted on a simple principle. The letter is first considered in its own unornamented form, and then by adding a horn and points affixed to the left hand or the right, the top or bottom of the letter, it is carried through the vowels *a* and *e* long and short, *i*, *o*, and *u* long, thus producing seven inflections to each letter. The following Table of the Abyssinian Alphabet will, however, more easily explain the system upon which it is constructed.—

Name.	A short	U long.	I long.	A long.	E long.	E short	O long.
Hoi.....	ሀ	ሁ	ሂ	ሃ	ሄ	ህ	ሆ
Lawi.....	ለ	ሉ	ሊ	ላ	ሌ	ል	ሎ
Haut.....	ሐ	ሑ	ሒ	ሓ	ሔ	ሕ	ሖ
Mai.....	መ	ሙ	ሚ	ማ	ሜ	ም	ሞ
Saut.....	ሠ	ሡ	ሢ	ሣ	ሤ	ሥ	ሦ
Ryys.....	ረ	ሩ	ሪ	ራ	ሬ	ር	ሮ
Sat.....	ሰ	ሱ	ሲ	ሳ	ሴ	ስ	ሶ
Kaf.....	ቀ	ቁ	ቂ	ቃ	ቄ	ቅ	ቆ
Bet.....	በ	ቡ	ቢ	ባ	ቤ	ብ	ቦ
Tawi.....	ተ	ቱ	ቲ	ታ	ቴ	ት	ቶ
Hharm....	ኀ	ኁ	ኂ	ኃ	ኄ	ኅ	ኆ
Nahas.....	ነ	ኑ	ኒ	ና	ኔ	ን	ኖ
Alph.....	አ	ኡ	ኢ	ኣ	ኤ	እ	ኦ
Caf.....	ከ	ኩ	ኪ	ካ	ኬ	ክ	ኮ
Wawe.....	ወ	ዉ	ዊ	ዋ	ዌ	ው	ዎ

Name.	A short	U long.	I long.	A long.	E long.	E short	O long.
Ain.....	ዐ	ዑ	ዒ	ዓ	ዔ	ዕ	ዖ
Zai.....	ዘ	ዙ	ዚ	ዛ	ዜ	ዝ	ዞ
Jaman.....	ዠ	ዡ	ዢ	ዣ	ዤ	ዥ	ዦ
Dent.....	ደ	ዱ	ዲ	ዳ	ዴ	ድ	ዶ
Gemhl.....	ገ	ጉ	ጊ	ጋ	ጌ	ግ	ጎ
Tait	ጠ	ጡ	ጢ	ጣ	ጤ	ጥ	ጦ
Ppait.	ጰ	ጱ	ጲ	ጳ	ጴ	ጵ	ጶ
Tzadai.....	ጸ	ጹ	ጺ	ጻ	ጼ	ጽ	ጾ
Zappa.	ፀ	ፁ	ፂ	ፃ	ፄ	ፅ	ፆ
Af.....	ፈ	ፉ	ፊ	ፋ	ፌ	ፍ	ፎ
Psa.....	ፐ	ፑ	ፒ	ፓ	ፔ	ፕ	ፖ

In addition to these Alphabetical Characters, there belongs to the Ethiopic language the following Table of Diphthongs.

A short	I long.	A long.	E long.	E or Y short.
ቈ k'ua.	ቊ k'ui.	ቋ k'ue.	ቌ k'ue.	ቍ k'uy.
ኈ h'ua.	ኊ h'ui.	ኋ h'ue.	ኌ h'ue.	ኍ h'uy.
ኰ k'ua.	ኲ k'ui.	ኳ k'ue.	ኴ k'ue.	ኵ k'uy.
ጐ g'ua.	ጒ g'ui.	ጓ g'ue.	ጔ g'ue.	ጕ g'uy.

The seven additional letters, which are used by the Abyssinians in the Amharic Dialect, with their seven inflections, are as follow.

Power.	A short.	U long.	I long.	A long.	E long.	E short.	O long.
Sh.	ሸ	ሹ	ሺ	ሻ	ሼ	ሽ	ሾ
Tj.	ቸ	ቹ	ቺ	ቻ	ቼ	ች	ቾ
Nj.	ኘ	ኙ	ኚ	ኛ	ኜ	ኝ	ኞ
Kh.	ኸ	ኹ	ኺ	ኻ	ኼ	ኽ	ኾ

Power.	A short.	U long.	I long.	A long.	E long.	E short.	O long
J.							
Dj.							
Tsh.							

To express the power of certain letters, which are not in the Ethiopan Alphabet, the following characters have been invented; the sounds of which were originally derived from the French, Spanish, Italian and German languages.

Power.	A short.	J long.	I long.	A long.	E long.	E short.	O long
Mj liquid							
V.							
Gl liquid.							

The characters which the Ethiopians use as Numerals are the ensuing, which were derived from the Greek, and in which the original form is still visible.

A	B	Γ	Δ	E	S	Z	H	Θ	I	IA
1	2	3	4	5	6	7	8	9	10	11

The letters then proceed, *Iota Beta* Twelve; *Iota Gamma* Thirteen, &c. to *Kappa Beta* Twenty-two, &c. These are also arranged upon the same plan,

K	KA
20	21 to

A	M	N	Ξ	O	Π	ϖ	Ρ	Σ	T
30	40	50	60	70	80	90	100	200	300

Numbers of Hundreds are accounted in a similar manner to those of Tens; thus, *Delta Rho* will be Four Hundred, *Epsilon Rho* Five Hundred, &c. and *Iota Rho* Ten Hundred, or A Thousand.

As is the case in most ancient languages, the names of the letters of the Ethiopian are technical words significative of various things; as *Mai* Water, *Bet* an House, *Ain*

the Eye, *Jaman* the Right, *Af* a Bone, &c., and in most instances they agree with the interpretations of the Chaldaic characters. The Ethiopian letters are divided into many general classes and sub-divisions; of the former are their partition into Vowels and Consonants, Radicals and Serviles; and of the latter are their arrangement into Dentals, Gutturals, Labials, Linguals, Palatines, Cognates, and Extranes; of all these we shall briefly speak, and close with a few remarks on the power of the letters, as corresponding with the languages of Europe. To each of the 26 Ethiopian characters belong Seven Vowels, expressed by points added to the consonants themselves, and each of these constitute a separate class. This will be better understood by a reference to the foregoing Paradigm of Characters. The first is called *Gyyzy*, or the Tongue, which is expressed by the letter in its simplest form, and corresponds with *A* in English, *Æ* in Germany, and *E* of the Continent in general. The Second Class is called *Knyby*, Another, or a Second; and is shewn by a horn and point issuing from the right hand; it is equal to *e* in Greek, *u*, in Italian and German, *ou* in French, and *oo* in English. The next division is entitled *Salesy*, Third; it governs the open I, and is indicated by a horn and point placed at the lowest part of the right hand line, where the character curves at the top; but when it is rounded or curved at the bottom, a perpendicular line is superadded, and the horn and point are affixed to it. *Rabyy*, or Fourth, is the name of the next class, which has the power of *A* long, or rather broad, as in All. It is shewn in the printed characters by shortening the left hand limb, of those which curve at the top, but when there is one limb only, a horn and point are added to that at the bottom. When the character is rounded beneath, a line is added to the right hand of the letter; and others which are singular in their shapes have their lines and points placed horizontally below the character. *Hamysy* or Fifth, has the power of the open *E*, as in the German *eh*, and it is shewn by a circle placed at the lower end of the right hand limb; but if the character be round, a line is added to receive it. *Sadisy*, or Sixth, has a sound which Ludolph found it extremely difficult to express; he relates, that it is somewhat between the continental *i* and *u*, and therefore it would be conveyed in English by *eeoo;* but in the table of characters, it is placed as *y*. Perhaps, however, its best pronunciation is that of *i*, in *Wit*. The presence of this vowel is indicated several ways, as may be seen in the table. *Sabyy*, or Seventh, is the last class of vowels: it has the power of *O* long, and is expressed by a circle at the upper parts of some letters, and an abbreviation of the right hand limb in others. A reference to the foregoing Alphabetical Table, pages 354,

355, will render this description more intelligible. The four Ethiopian Diphthongs proper, as it will be seen on page 355, are separate characters, all formed out of the letter *u*, in combination with the other vowels; but sometimes the inflections of the letters themselves produce diphthongs, as *Wawe*, in the sixth class, will be *Ue*, and *Iaman* in the same will have nearly a similar sound. The Dental letters in the Ethiopian alphabet, are *Sant*, *Sat*, *Zai*, *Zadai*, and *Zappa*. The Gutturals are, *Hoi*, *Ha*, *Harm*, *Alph*, and *Ain*. The Labials are, *Bet*, *Mai*, *Wawe*, *Pait*, *Af*, and *Psa*. The Linguals are, *Lawi*, *Ryys*, *Tawi*, *Nahas*, *Dent*, and *Tait*. The Palatines are, *Kaf*, *Caf*, *Gemhl*, and *Iaman*. The Cognates are, *Kaf*, *Caf*, *Tawi*, *Dent*, *Gemhl*, and *Tait*. The Extranes are, *Lawi*, *Ryys*, *Nahas*, and *Iaman*. The Radicals are, *Haut*, *Sant*, *Ryys*, *Kaf*, *Harm*, *Ain*, *Dent*, *Gemhl*, *Tait*, *Pait*, *Zadai*, *Zappa*, *Af*, and *Psa*:— the remainder are Serviles, although in certain circumstances they become Radicals. The powers of the Ethiopian letters are sufficiently expressed by the Alphabetical Table, since the name gives the Initial, and the other columns the vowel it governs; but the following remarks on the sound of a few of the peculiar characters, will be found useful. *Hoi*, *Haut*, and *Harm*, have all the power of *H*, but the latter possesses it in a double degree, for which reason it is sometimes spelled *Hharm*. *Sant*, and *Sat*, differ but little from the plain *S*, excepting in having a greater degree of force. *Alph*, and *Ain*, are sounded like the Hebrew *Ain*, with an expression not to be learned but by hearing. *Bet*, is articulated like the German *B*, which is sometimes confounded with *P*, *V*, or *W*. *Caf*, is the English *K*, or *C*, hard. *Wawe* is sounded like the English *W*. *Zai*, has the power of the English *Z*, *ds*, or a strong *S*, when between two Vowels; the Hebrew *Zain*, also approaches very near to it. *Dent*, is *D* in effect, and is like the German sound of the same letter, *viz*. *Dt*. Gemhl is similar to the Hebrew *Gimel*, and always retains its hard sound.

Before quitting the subject of the Abyssinian language, we shall give one more specimen of its letters, as they appear in connection. The following is a translation of The Lord's Prayer, taken from *Oratio Dominica, plus centum linguis Versionibus, aut Characteribus reddita et expressa*, Lond. 1715. 4to. *p*. 27. A copy of this Prayer printed in the same language, but in the Roman Character, will be found in the same work, and an *Essay towards a real character and Philosophical Language, by John Wilkins, D. D.* Lond. 1688, Folio. p. 35. It has also been printed in both languages in J. Ludolph's *Ethiopian Lexicon*, page 11, vide below, from which work the explanatory arrangement of the following has been adopted.

አቡነ፡ ዘበሰማያት፡ ይትቀደስ፡ ስምከ፡፡
Abnaa *zabasamajate* *jytekadasy* *symyca.*
Our Father who (art) in Heaven, hallowed be thy name.

ትምጻእ፡ መንግሥትከ፡፡ ይኩን፡ ፍቃደከ፡
Tymezaay *manegytyka.* *Jykune* *fakadaca*
Let come thy Kingdom. Let be done thy will

በከመ፡ በሰማይ፡ ወበምድርኒ፡፡ ሲሳዮነ፡
bacama *basamaje,* *wabamyderenі.* *Sisajana*
en as (it is) in Heaven, and also in Earth. Our Food,

ዘለለ፡ ዕለትነ፡ ሀበነ፡ ዮም፡፡ ኅድግ፡
zalala *aylatyna,* *habana* *jomy.* *Hydygy*
who every of our days (givest sufficient), give us this day. Forgive

ለነ፡ አበሰነ፡ ከመ፡ ንኅነኒ፡ ንኅድግ፡
lana *abasana,* *cama* *nyhynani* *nyhadygy*
to us our sins, even as we also forgive

ለዘ፡ አበሰ፡ ለነ፡፡ ወሊቲብአነ፡ ውስተ፡
laza *abbasa* *lana.* *Waaitabyana* *wysyta*
to them who have sinned to us And do not lead us into

መንሱት፡፡ አላ፡ አድኅነነ፡ ወባልሐነ፡
manysuty. *Aala* *adyhynana,* *wabalyhana*
temptation. But preserve us, and free us,

አምኵሉ፡ እኩይ፡፡ እስመ፡ ዚአከ፡
aymykuylu *aykujy.* *Aysyma* *ziaca*
from all evil. For thine

ይእቲ፡ መንግሥት፡ ኀይል፡ ወስብሐት፡
jyayti *manysygyty.* *hhajyly,* *wasybyhaty.*
is the kingdom, power, and glory,

ለዓለመ፡ ዓለመ፡ አሜን፡፡
laaalama *aalama,* *Ameny.*
through ages of ages, Amen.

Throughout the whole of this translation, when the letter has been combined with the sixth vowel, it has been given by both a short e, or y, as being of a synonymous power.

The Religion of the Abyssnians, as may be seen by the preceding prayer, is Christianity, although it is blended with many traditions and Hebrew superstitions. Ludolph has given an interesting specimen of the Liturgy of St. Dioscorus, Patriarch of Alexandria, as it was used in Ethiopia; and of this a translated extract will close the present article, as being an appropriate counterpart to the above, and a combination of grand ideas and impressive language.

"At the Administration of the Lord's Supper. From age to age is the Lord in his Kingdom; the Lord is in his Trinity; the Lord is in his Divinity. Even before the Day-break, and the Morning; before that the Day and Night were; before that Angels were created, was the Lord in his Kingdom. Before that the Heavens were spread out; and even before the face of Dry-land appeared; and even before the herbs began to put forth buds, was the Lord in his Kingdom. Before the Sun, and the Moon, and the Stars; and before the revolutions of the Lights, was the Lord in his Kingdom. Even before the Beasts which crawl, and the Birds that fly, and even before the great Fishes of the Seas, was the Lord in his Kingdom. Before that Man was created with his own image and likeness, and even before he transgressed his commandments, was the Lord in his Kingdom — Hear ye Heavens, and give ear O Earth, and be thou shaken to thy strong foundations. The Well-beloved of the Father, of himself descended to .....* and was a stranger. In immaculate virginity God is born. In a cavern he is reared and brought forth. He took the gifts which Kings offered to his honour. In the likeness of an infant he wept, and sought his nourishment from the breasts of his Mother. He walked *on the Earth* as a Man, and was manifest unto the sight. By degrees he arrived at manhood; *and* at *the age of* thirty years, he was baptized in *the River* Jordan. *Being* altogether as a man, he hungered *whilst* he inhabited the Desart. By the Devil he was tempted, but by the virtue of his Divinity he dispersed the Princes of Darkness. Although he was a King, he shewed himself in the form of a Servant. He spread out his hands which had created men, that men might be free from the judgment of sin. In that night in which he was betrayed, he took bread into his holy, pure, and undefiled hands; *and* looking up to Heaven where his father *is*, he gave thanks, blessed, and brake it, and gave it *to his Disciples*; his holy Disciples, and his pure Apostles, and said to them, 'Take, Eat, this is my body, which is broken for you, for the remission of sins.' In like manner also he mixed wine and water, gave thanks, blessed, and hallowed it, and gave it unto them his holy Disciples, and his pure Apostles, and said to them, 'Take, Drink; This Cup is my blood, poured out for you for the remission of sins.'"

The Service then continues to relate the succeeding events till Pentecost, and the separation of the Apostles: and it afterwards proceeds to supplicate the sanctifying power of God, in adapting the emblem of his Son's death to the souls of men. It concludes with a fine contrast between the infinity of the Lord and the weakness and wickedness of mortals, and the usual ascription of eternal glory.

Additional information respecting the Ethiopian language, will be found in Jacob Ludolph's *Lexicon Æthiopico Latinum*, Lond. 1661, 4to; *Grammatica Æthiopica*, Francfort, 1702, Folio, by the same author; *Travels to discover the Source of the Nile*, by James Bruce, Edin. 1807, 4to.; and *A Voyage to Abyssinia*, by Henry Salt, Lond. 1814, Quarto.

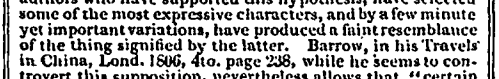
* A blank in the original.

CHINESE.

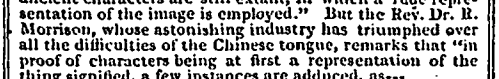
THE last descendant of the Hebrew tongue, is the language of China; although it is impossible to say by whom, or at what period it was carried into that Nation. Indeed it has been considered as standing in such a relation, rather because imagination knows not where else to place it, and history gives no other light for any other hypothesis. From what Nation the Chinese had their origin, or whether they were first planted in the land which they occupy, by the hand of Divine Providence, it is now impossible to decide. Their own Annals, when blended with the visionary fancies of the enthusiast Fo, carry back the history of the Nation to a period, which sets all European Chronology and Cosmogony at defiance; but when divested of them, it goes only to somewhat more than 3000 years before the Birth of Christ; which brings it to about the time of the Deluge, as that great event took place in the year of the World 2366, and 2348 years before the Nativity of our Lord. Concerning the origin of the Chinese, there are four hypotheses extant; namely, first, that they are an original people, who have dwelt within their own country for ages: secondly, that they have descended from the Hebrews and Arabs; thirdly, that they came from one of the Tartar Nations, who came down from the Steppes of Imaus: and fourthly, the Bramins state that the inhabitants of China are derived of the Military Hindoos. To the latter of these suppositions, Sir William Jones seems to incline, since he considers the Chinese and the Hindoos as the same people, and he identifies with a wonderful degree of Oriental knowledge, the Deity Fo, of the former nation, with the Buddho of the latter. Other writers incline more to the Tartaric derivation of the Chinese, on account of their physiognomical character, and refer the similarity of manners, of their rites and superstitions, to other nations, to visits from various other people. Before language was reduced to a written character, the Chinese imagine that the commands of Rulers were made known, and that ideas were communicated by means of Knotted Cords. A character somewhat resembling these is said to have been formed from the trigrams of Fo-Hi, the First Emperor of China. The combinations of his characters were eight in number, and were intended to represent the eight Chinese elements, as well as the two foundatory principles; namely, Heaven and Earth, Male and Female, Perfect and Imperfect, from which all other parts of Nature were formed. The characters or trigrams of Fo-Hi, consisted of two broad straight lines, one of which was entire, and the other divided; but it is supposed, that when knotted cords came into use for the expression of wishes or commands, that the first

writing after their invention, was constructed of the line, as before, but broken by the insertion of small outline circles placed at various distances along it. In representing the celestial figures, the Ancient Chinese found that the knotted cord was excellently adapted for the depicting of the Constellations. Thus the circle or knot stood for the Star, and the connecting line defined the form of the Heavenly sign; nor was this method peculiar to the Chinese, since the Chaldeans, as we have already shewn, vide ante, pages 300-1, formed similar characters, although their's were assumed from the stars, instead of being adapted to them. All traces of these knotted cords are not yet lost in China, since both their Swan-Pan, or Arithmetical Table, and their method of carrying their money, were evidently derived from the ancient use of them. The former of these, the Chinese Abacus, is a shallow box, in the shape of a parallellogram, which is unequally divided in the longer way, by a thin wooden partition. Across the box are several stout wires, which pass through the partition, and are fastened into each of the longer sides. Upon these wires, both above and below the partition, are placed a quantity of small hollow wooden balls, which pass up and down them with the greatest freedom; and they are calculated by tens and multiples of tens, the upper balls being each reckoned for five, and the lower for units. The Hebrew, the Egyptian, and the Greek, have all been named as the primitives of the Chinese; but it would certainly be a difficult task to produce proof of a direct descent from any of them, although it might be comparatively easy to shew its connection with all. This circumstance may however be received, as a sufficient proof that the Chinese are not an original people like the Hebrews, as some would endeavour to substantiate; but were a formed Nation, like all the others of the Earth. Dr. Marshman, who has laboured to prove that there does not exist any connection between the Sanskrit and Chinese languages, and whose hypothesis will be more particularly mentioned in our notice of the former tongue, has also endeavoured to prove that there is no more connection between the speech of the Hebrews, and that of the inhabitants of China. He found, by an examination of the original text of Judah's address to Joseph, contained in Genesis, chap. xliv., that out of 206 words, in which are 16 monosyllables, only 7 of them were Chinese. He then proceeds to consider Abraham's intercession with God on the behalf of Sodom; in which he found 230 words, containing 10 monosyllables, but only 4 Chinese. Lastly, the learned Doctor takes Noah's prophetic Curse of Canaan, where there occur 26 words, one monosyllable, but not one Chinese word. From these philological experiments the Doctor concludes, that to derive the Chinese

language from the Hebraic, is nothing less than absurd, since in the first instance, only one word occurs out of 29, in the second, one out of 50, and in the third, one out of 26. But even this small number militates against this hypothesis, that they are an original people, and that their language was invented by themselves; because it is scarcely probable that they could give that Hebraic character both to their tongue and writing, if the idea had not been previously conveyed to them. With respect to the Egyptian language forming the foundation of the Chinese, those authors who have supported this hypothesis, have selected some of the most expressive characters, and by a few minute yet important variations, have produced a faint resemblance of the thing signified by the latter. Barrow, in his Travels in China, Lond. 1806, 4to. page 238, while he seems to controvert this supposition, nevertheless allows that "certain ancient characters are still extant, in which a rude representation of the image is employed." But the Rev. Dr. R. Morrison, whose astonishing industry has triumphed over all the difficulties of the Chinese tongue, remarks that "in proof of characters being at first a representation of the thing signified, a few instances are adduced, as---



Now written,



Letters in China, as it is supposed by the Natives themselves, were the invention of a person called Ts'hang-hee, who devised them from the form of a Celestial Constellation, the marks on the Shell of a Tortoise, and the print of a horse's foot. But Paou-Shee, who lived in the third century of the world, is considered the Father of Chinese Letters, since he formed a work entitled Luh-Shoo, or the Six Writings, the contents of which he taught to his pupils. He asserts in that volume, that nine-tenths of the Chinese characters were originally Hieroglyphic; but that for the sake of convenience, speed, or beauty of writing, they became so abbreviated or extended, that their forms were gradually lost. About 800 years previous to the Christian æra, the Seal character, which consists of the general character greatly compressed without any difference of thickness, (Vide Table II. Nos. ix. xvii. xxii.) was first used. A person named Chow, invented the Ta-chuen-Wan, or letters depicting the object; in which he proposed to represent the straight lines of the Dragon, the crooked windings of the worm, the footsteps of birds, the marks on

shell-fish, and the figures of plants, trees, insects, swords, and spears. About five centuries afterward: Le-sze remodelled the Chinese character; and reducing the number of strokes, formed the Seaou-chuen-wan, or the Little Engraved Letters, which however are sometimes confounded with the Seal character, although their forms are distinctly different. They are now called Chung-Ting-Wan, or the Letters of Bells and Tripods, since they are supposed first to have been derived from the Hieroglyphics on ancient metal vases, which preserved the old characters of China, when the Emperor Che-hwang-tee (about the year of the world 3700), commanded all books to be burned. For specimens of these characters, Vide Table II. No. xvi. The contractions and inconveniences attendant upon the Seal character, caused the Dynasty Han, (A. D. 200), to order it to be reformed to the Le-tsze, or the Court Officer's character, so called from the Clerks of the Public Courts having framed it. It has however been ascribed by some, to one Ching-mo, who invented it in prison. About the year of our Lord 300, Wang-t'hsze-chung, first wrote the Kae or Kea-Shoo, or Level or Excellent Writing, which is considered the most beautiful form of the Chinese character; but in this instance, as well as in some of the former, the original shape is almost wholly lost. Heu-Shin an Officer of Government, suspecting that at some future period such a revolution might take place, about the year 100 of the Christian Era, composed the work entitled Shwo-wan, a Discourse or Explanation of Letters, in which he endeavoured to preserve the derivation and meaning of the ancient character. The Tsaou-tsze, Grass character, or Running-hand, was invented about the same period by Shey-yew, for the purposes of dispatch in the affairs of Government, but official documents are written in the Kae-Shoo form. It will be seen from the foregoing sketch of the history of the Chinese language, which is an abstract from the Rev. Dr. Rob. Morrison's admirable Chinese Dictionary, that it has undergone many changes, and is composed of many and various materials. The character at the present time is said to be deduced from six different sources: Firstly, from those letters which bear a resemblance to the object, as in the instances already given, Vide ante, page, 363: Secondly, from letters which point at some property, as Shang, Above, is a character like an inverted T thus, ⊥: Thirdly, from a combination of ideas, as Sin, Truth or Belief, is formed from Man and Word: Fourthly, from the sound of the thing spoken of, in which point they greatly resemble the ancient Greeks, as Ho, A River; but sometimes a part of the character is put for meaning and a part for sound: Fifthly, by inverting or reversing various charac-

ters to express contraries; thus Cho to grow out of the ground, consists of three perpendicular lines pointing upward, rising out of a horizontal one, through the middle of which the centre line passes, into another horizontal one which serves as a base, thus giving the idea of a plant or flower growing; the same character reversed, is Tsu, to Revolve, or go round: and Sixthly, arbitrary characters, which have been borrowed by the Chinese to express sounds which they have not in their language; as Ch'lang, Long. There are Five Varieties of the Chinese character now in use: namely, the Ching-tseé, Right Character or Plain Hand, which is used for writing of books and government papers, and is the most correct formation of the character; Vide Table II. No. V. where it is shewn in the character of the Word Tung, the East. Secondly, Hing-tseé or the Free hand or Walking character, which is written with more freedom; Vide No. VI., where the same word Tung is delineated in this manner. No. VII. shews the same word written in the Tsiou-tseé, the Grass character or Running Hand, in which Letters, Accounts, and Prefaces to books are written, and in which there are several ways of writing the same character. In No. VIII., Tung is written in Lé-tsée or Ancient Character; and in No. IX. it is shewn in the Chuen-tsée, or Seal character.

The language of China is monosyllabic; and the single syllables of which the Chinese words are formed, distinguishable by the English alphabet, are about 350 in number. The sound of these syllables varies in the different ranks and Districts of China; but that which the Europeans denominate the Mandarine Tongue and the Chinese call Kwan-hwa, or the Public Officer's Dialect, is spoken at Court, and by the best educated persons throughout the Empire. The Provincial Dialects differ not only from this, but also each other; since the speech of the inhabitants of Canton differs from that used by those of Macao; and the pronunciation of the people of Nanking is dissimilar from that used at Peking. The general mixture of Tartars and Chinese in the extensive Nation of China is the real cause of this disagreement: for as the Rulers are derived of the former people, their pronunciation prevails with many; and as the literary part of the country is composed of the latter, their pronunciation is recorded and promulgated in books. The number of characters which compose the general language, and to which these sounds may be applied, are about 80,000; but these may be again reduced to a small number of Key or Radical Characters, which the Chinese call Poo, or a Tribunal; they consist of 214 in number, and are shaped like the following large specimen, which was copied from the *Encyclopedie Francoise*, Plan. Vol. II. Pl. 25.

Che.	Mà	Taé	Chih or Chay.	Sih or Se.	Wàng.
To Embroider.	A Horse.	Highest.	Carnation colour.	Colour.	A Net.
204.	187.	171.	165.	139.	122.
Mung.	Kwo or Kuh.	Chue.	Tsów.	Tsaou.	Yang.
A Toad.	A Bone.	Wings.	To Walk.	Herbs.	A Sheep.
205.	188.	172.	166.	156.	123.

In Order however that the whole of the Chinese Keys may be seen at one View, we have prepared the following Table of them, with the annexed list of their names and signification. The forms of the characters, which are more correct than those from the French work already cited, are from the excellent Dictionary of Shà-muh published by

羽 Yù. Feathers. 124.
虎 Hoò. A Tiger. 141.
足 Tso or Tsuh. The Foot. 157.
雨 Yu. Rain. 173.
高 Kaou. High. 189.
鼎 Ting. A Tripod. 206.
老 Laoû. Aged. 125.
虫 Chung. An Insect. 142.
身 Shin. The Body. 158.
青 Tsing. Azure. 174.
髟 Peaou. Long Hair. 190.
鼓 Koo. A Drum. 207.

Imperial Authority, in 42 Volumes Octavo; and in order that the foregoing may be contrasted with the annexed, the Number of the Key is placed beneath the explanation. In the Table ensuing, it will be observed that the Numbers count across.

I. TABLE OF THE CHINESE RADICALS.

	2	3	4	5	6	7	8	9	10	
1	一	丨	丶	丿	乙	亅	二	亠	人	儿	入	11
12	八	冂	冖	冫	几	凵	刀	力	勹	匕	匚	22
23	匸	十	卜	卩	厂	厶	又	口	囗	土	士	33
34	夂	夊	夕	大	女	子	宀	寸	小	尢	尸	44
45	屮	山	巛	工	己	巾	干	幺	广	廴	廾	55
56	弋	弓	彐	彡	彳	心	戈	戶	手	支	攴	66
67	文	斗	斤	方	无	日	曰	月	木	欠	止	77
78	歹	殳	毋	比	毛	氏	气	水	火	爪	父	88
89	爻	爿	片	牙	牛	犬	玄	玉	瓜	瓦	爻	99
100	生	用	田	疋	疒	癶	白	皮	皿	目	矛	110
111	矢	石	示	禸	禾	穴	立	竹	米	糸	缶	121
122	网	羊	羽	老	而	耒	耳	聿	肉	臣	网	132
133	至	臼	舌	舛	舟	艮	色	艸	虍	虫	血	143
144	行	衣	襾	見	角	言	谷	豆	豕	豸	貝	154
155	赤	走	足	身	車	辛	辰	辵	邑	酉	赤	165
166	豆	酉	豕	門	阜	隶	隹	雨	青	非	走	176
177	革	韋	韭	音	頁	風	飛	食	首	香	足	187
188	骨	香	音	鬥	鬲	鬼	魚	鳥	鹵	鹿	身	198
199	麥	麻	黃	黍	黑	黹	黽	鼎	鼓	鼠	車	209
				齊	齒	龍	龜	龠				

210 211 212 213 214

The Chinese form their characters with Indian Ink, and a painting hair pencil fixed in a hollow piece of cane;* which is held erect between the thumb on one side, and the fore and middle fingers on the other. The wrist and the whole of the fore arm are rested firmly upon the table; while the paper upon which they write, is placed straight before them. Their writing is in perpendicular columns, which are to be read from the top to the bottom of the page, and from the right hand column successively to the left. Sometimes however, when single lines occur, as in the instances of inscriptions over Temples, Shops, &c., the words are written horizontally from right to left. After all however, such is the completeness of every Chinese character in itself, that if the language be written from top to bottom, it may be read either upwards or downwards; or if it be written horizontally, it may be read either from right to left, or from left to right, with equal propriety. This convenience in writing probably arises from the want of particles in the language, and an illustrative specimen will be given hereafter, which will more particularly evince it. The Chinese Radical letters are divided into Classes, according to the numbers of Strokes of the Pencil which they contain; and then each Radical is placed at the head of a new family of characters, arranged upon the same plan, all of which contain their Key or Generic mark visible in some part of their Specific compound. This is generally placed on the left hand side, though it sometimes appears on the right, above the character or below it, so that no particular rule can be given for ascertaining it, excepting that it is commonly the most conspicuous part of the letter. The method of discovering the Key of any particular character, will also be more minutely described hereafter. It is then upon the preceding plan, that the modern Chinese Dictionaries are arranged; there is first a General Table of Keys and their Explanations; and then follows each Radical character at the head of its own family; of which those that are formed of one stroke more than the original letter come first, then those with two, and so onward to the most complex. Thus, in searching for a word in a Chinese Lexicon, after the Radical has been ascertained, the remaining

* Hair Pencils were invented in China, 300 Years before the Birth of Christ; and Cakes of Ink, such as are now used, about the Year 600 of the Christian Era. Paper was first written on by Tsaolun, at the end of the first century after Christ, previous to which the people of China wrote on Silk, cloth, thin wooden boards, or bamboos, with a pointed stick and liquid ink. Their earliest printing was from Stone, having white characters on a black ground; it was introduced to the Chinese Government by Fung taou, a Minister of State, and prevailed so early as the Tenth Century. Engraving upon wooden blocks was a subsequent invention.

Strokes must be numbered, and then a reference must be made under the corresponding division of the original letter. It will be important to observe, that the Chinese, in writing, commence at the left side of the letter;—that they form horizontal lines before perpendicular ones, excepting the lowest horizontal stroke in the character, which is always made last;—and that the left, top, and right sides of squares are drawn before the figures which they enclose. As the ensuing Table contains a series of Chinese words, the following general rules for pronunciation will be found of considerable utility. The best European spelling of the language of China is the Portuguese, which is that used in the examples given in this article; but in the annexed list, there are three different systems of orthography brought forward. Of these, the first is the Portuguese as used by Dr. Morrison, the French as used in M. De Guigne's *Dictionnaire Chinois*, and a third sort which may be considered as the German, as used in Dr. Huger's *Elementary Characters of the Chinese*. In pronouncing the following syllables. *A*, has the power of the German *Ah*, or *A*, in the English word Father: as *Yu*, in the Second Degree. It has also a sound like *A*, in Hat, as *Kwan*, Fatigued; and before *ong*, or *Y*, it is pronounced long, like the same letter in pale, or *ay*, in May, as *Chaong*, Long, *Chay*, a Cart. *Ae*. are sounded like *i*, in the word High somewhat elongated, or more like the continental sound of *ai*, as *Chae*, to Send. *Aou*, have also a Continental sound, similar to that of the first *a*, mentioned above, in connection with *oo*, as *Chaou*, to Call an Inferior. *E*, final, is expressed as it is in the word *Me*, as *Che*, This; but if the syllable end with a double *e*, they are sounded long, with a method of pronunciation peculiar to the Chinese, as *Kee Keue*, Appearance of Motion. *E*, has also a short sound like the same letter in Met, as *Keue*, a Hooked Weapon. *Eu*, have the peculiar sound which they possess in French, as in the word *peu*, &c., as *Cheu*, Ugly; and *Ew*, are sounded according to the English custom as in View, New, &c., as *Kew*, Rolling Eyes. *G*, is usually pronounced hard, as *Gan*, a Clean Sky. *I*, is expressed with the French sound of that letter, which makes it *e*, as *Ping*, an Isicle; and *Ih*, pronounced like *a*, short *i*, similar to that in with, as *Jih*, to Enter. *J*, has the soft gliding sound which it possesses in the French, as *Jin*, a man. *Oa*, have the power of the same letters in *Moan*, as *Choang*, a Bed or Couch; and *Ow*, when used in a substantive, are sounded like the Greek *ω* or *ou* in Noun, as *Now* Anger. *U*, has two sounds, one nearly like *Eu*, mentioned above; as *Yu*, to Give; and the other, or *Uh*, is short, like *u*, in but, as *Tsuh*, Mournful. A final *Y*, is expressed as in the Welsh, or in the English word Truly, as *Hway*, to Return. *Ze*, have a buzzing sound some what

like *Z*, in the German and Italian languages, as *Tsze*, to Fix. We now proceed to give a descriptive list of the foregoing Table of Keys, classed according to the arrangement above described, with numbers referring to their respective characters in the engraving, their Chinese names and English significations; the whole of which has been compiled from the best authorities.

NAMES AND EXPLANATIONS OF THE CHINESE RADICAL CHARACTERS.

Class I. Characters formed by One Stroke of the Pencil.

No	Portuguese	French	German	Explanation
1	Yih, Ye.	*y* short.		One, the First, Unity, Straightness, Perfection. Key of Unity.
2	*c Kwan, Keuèn.	Kouèu.		To Descend. Dr. Hager says Ascent.
3	Choo, Chù.	Tchù.		A Point. Apex. Key of things which end in a point.
4	c Peih, Pee.	Pie.	Pie.	Bent out or downward. Key of things curved to the right.
5	Yih, Yay.	*y* short.	Ye.	One, Unity. Key of things curved.
6	c Keue.	Kue.	Kiue.	Hooked.

Class II. Characters formed by Two Strokes.

No	Portuguese	French	German	Explanation
7	Urh.	Eul.	Ulh.	Two, Second, Double, Repetition.
8	c Tow.	Teou.	Teu.	Undefined. Dr. Hager calls it Head. Key of things having a top or summit.
9	c Jin.		Gin.	A Man.
10	c Jin, Vo.		Gin.	A Man. Things elevated.
11	Jih, Juh, Jo.	Jy.	Go.	To Enter. Entrance. Penetrating.
12	Pa.			Eight. Things doubled.
13	c Keung.	Kiong.	Kiung.	A remote limit, a wilderness, any thing covered. The Country.
14	c Mee.	My.	Mie.	To cover. A covering.
15	c Ping.			Ice, an Isicle. Two Drops.
16	c Ke.	Ky.	Ki.	A Table or Bench, Niche, support.

* The characters marked c, are used only in forming compounds.

No	Portuguese	French	German	Explanation
17	c Kang.	Kan.	Kan.	Gaping. An Abyss, things falling in a Gulf. A Descent.
18	c Taou.	Tao.	Tao.	A Knife, Sword, Hatchet, Scythe.
19	Leih, Lee.	Ly.	Lie.	Strength, Force, Power, Cunning.
20	c Paou.	Pao.	Pao.	To Fold. Complex or Rolled up. To Envelop.
21	Pe.	Py.	Pi.	A Spoon. A saddle.
22	c Hc.	Hy.	Hi.	A Receptacle, a Box.
23	c Fang.			A Receptacle, a chest, a coffer. Armory.
24	Shih, Shay.	Chy.	Xe.	Perfection, Ten, The last in the Chinese numeration.
25	Puh, Po.			To Divine, Divination by the Tortoise. To cast Lots. To Give.
26	c Tsee, See.	Tsie.	Cie.	To Seal. Ancient Seal on Stone or Ivory. A knot in wood. To cut.
27	c Han.			Shelter, a place of abode or rest. Rocks.
28	Mow.	Meou.	Su.	Crooked, curved, any thing triangular, union.
29	Yew.	Yeou.	Yeu.	The hand, more, again, still. To hold, to have, and, also.

Class III. Characters formed by Three Strokes.

No	Portuguese	French	German	Explanation
30	K'how, Keu.	Keou.		The Mouth.
31	Hwuy.	Oey.	Yu.	An enclosure, to surround. Things shut up.
32	Too.	Tou.	Tu.	The Ground or Earth, one of the Five Chinese Elements.
33	Sze, Seé.	Sse.	Szu.	A Scholar, Learned, Magistracy, Doctor, Wise.
34	Che.	Tchy.	Chi.	To follow, come after. To walk slowly.
35	c Shuy, Suy.	Souy.	Sui.	To walk slowly. To come one after another.
36	Seih, See.	Sy.	Sie.	The Evening, Darkness.
37	Ta.		Ta.	Large, Great, Beginning, Greatness.
38	Neu.	Nuu.	Niu.	A Woman.
39	Tsze, Tsee.	Tsé.	Su.	A Son, a Child, Heir, Generation.
40	c Meen.	Mien.	Mien.	To Collect. Coverings of a house.
41	Tsun.		Sun.	An inch. Tenth part of the Chinese cubit. Key of measures.
42	Seaou.	Siao.	Siao.	Little, Small, Littleness, Low, Common, a Little.
43	c Wang or Yew.	Ouang.	Vang.	An irregular waving edge. Things twined or curved. Crooked.

No.	Portuguese.	French.	German.	Explanation.
44	She.	Chy.	Xi.	A Corpse. The Dead.
45	Che.	Tche.	Sao.	A Bud. An herb beginning to bud. Grass, Herb, Flower.
46	Shan.	Chan.	Xan.	A Hill, a Mountain.
47	c Chuen.	Tchouen.		A channel for Water. Flood, Rivèr, Torrent.
48	Kung.	Kong.		Work, a Workman, Materials, Art.
49	Ke.	Ky.	Ki.	One's self. Time past.
50	Kin.			A Napkin. Bonnet, Hat, Mitre.
51	Kan.			A shield. To seek, Ask, Sin, apply one's self. Rivers.
52	Yaou, Yéw.	Yao.		Slender, little, young, subtle, thin.
53	c Yen.	Yèn.		To protect. Shop. Warehouse, cover of an House, Magazine.
54	Ying.	Yn.		A long Journey. Travel.
55	c Kung.	Kòng.		To join hands.
56	c Yih, Yay.	y *short.*	Ye.	A Dart. To Dart. To draw a Bow. Take, Catch.
57	Kung.	Kong.		A Bow.
58	c Ke.	Ky.	Ki.	A Hog's head, Swine, Wild Boar.
59	Shang, Shan.	Chan.	Xan.	Hair or Hairs. A Feather. To ornament any thing with plumes.
60	c Chih, Che.	Tchy.	Che.	To pace. A walk. To walk. The left foot.

Class IV. Characters formed by Four Strokes.

No.	Portuguese.	French.	German.	Explanation.
61	c Sin, Shin.			The Heart, the Mind, Affections, Intentions, Will, Inward.
62	Ko.			A Lance, Arms.
63	Hoo.	Hou.	Hu.	An inner door.
64	c Show.	Cheòu.	Xeù.	The hand.
65	Cho.	Tchy.	Chi.	A branch, Limbs of a Tree. To receive, Take, Aid, Sustain.
66	Puh.	Po.		A slight stroke. Affairs, Business, to arrange, govern.
67	c Wan.	Ouen.	Ven.	Fair, Excellent, Letters, Literature. Composition, Line.
68	Tow.	Teòu.	Teù.	A Chinese measure of Teu xing. A Firkin. Measures of Liquids. A Barrel.
69	Kin.			Chinese pound. Book. Proper name.

No.	Portuguese.	French.	German.	Explanation.
70	Fang.			Square, then. Angle, place, Country, method, Order.
71	Woo, Vù.	Ou.		Not, wanting, Negative. Nothing, Without.
72	Jih, Je.	Jy.	Je.	The Sun, Day.
73	Yue.		Youe.	To say, to speak. Words. To call, name.
74	Yue.		Yue.	The Moon. Month.
75	Muh, Mo.			Wood. A Tree.
76	Keen.	Kièn.		To owe, Indigence, want, a Debtor, Deficiency.
77	Che.	Tchy	Chi.	To Stop. Discontinuation. Interruption. Finish. An Impediment.
78	Tae.	Ya.		Evil, Bad. Corrupted Bones, Death, to Die.
79	Shoo, Chu.	Tchu.		To kill by striking, a Staff.
80	Woo, Wù.	Vou.		Not, Do not. Denial. Dr. Hager calls it Mu, Mother.
81	Pe.	Py.	Pi.	To compare, Examination. To Assimilate. A measure. A Rule.
82	Maou.	Mao.		Hairs, Wool, Feathers of Birds, Down, Grass.
83	She.	Chy.	Xi.	A Family name. Title. Surname.
84	Ke, Kee.	Ky.	Ki.	Air. Living principle. Vapour.
85	Shwuy, Shùy.	Choùy.	Xui.	Water.
86	Ho.	Hò.		Fire.
87	Chaou.	Tchào.	Chao.	Nails of the Hand. Claws of Beasts and Birds. To Scratch.
88	Foo.	Fou.	Fu.	A Father.
89	Heaou.	Hiào.	Yao.	To imitate. Imitation.
90	Chwang.	Pan.		Undefined. Support. Dr. Hager calls it an Outward Prop.
91	Peen.	Pien.		A splinter. Support, Division. An Inward Prop. A Numeral of the Petals of Flowers, or Leaves of a Book.
92	Ya.			The Teeth. Grinding Teeth.
93	New.	Niéou.	Nieu.	A Cow. An Ox.
94	Keuen, Kiuen.	Kenen.	Kiuen.	A Dog.

Class V. Characters formed by Five Strokes.

No.	Portuguese.	French.	German.	Explanation.
95	Heuen.		Yuen.	Blackish. Dark Colour. Profound.
96	Yuh, Yo.			A Gem. Precious Stones. Precious.

No.	Portugdese.	French.	German.	Explanation.
97	Kwa.	Koua.	Kua.	A Melon. Cucumbers.
98	Wa.	Oua.	Va.	Tiles, Bricks.
99	Kan.			Sweet, Soft, Grateful, Taste.
100	Sang.	Seng.		To produce. To be born. To live. To come in life.
101	Yung.	Yong.		To use. Useful. To apply.
102	Teen.	Tieu.		A Field, Cultivated ground.
103	Shoo, Pee.	Py	Pie.	A Foot, Piece of Cloth, Measure of length. Stuff, Silk.
104	Neih, Tsco.	Tsy.	Cie.	Sickness, Disease, a Wound.
105	Puh, Po.			A Mound, To Mound. Ascending. To Mount.
106	Pih, Pe.			White, Whiteness. Pure, Sincere.
107	Pe.	Py.	Pi.	Skin, Leather, a Hide.
108	Ming.		Min.	Dishes. Eating and Drinking Vessels.
109	Muh, Mo.			The Eye. To See.
110	Mow.	Meou.	Meu.	A Spear. A Hooked or Barbed Weapon.
111	She, Shi.	Chy.	Xi.	An Arrow, True, Right. To dart a Javelin.
112	Shih, She.	Chy.	Xe.	A Stone.
113	She, Shi.	Ky.		To Admonish. Enjoin. Genius, Wit, Spirits. To Reveal. Alacrity.
114	Tow, Seu.	Jeou.	Geu.	To Creep. Quickness, Promptitude, Diligence.
115	Ho.			Grain. Generic name for Corn, Pulse, &c.
116	Heue.	Hue.	Hiue.	A Den, Cave, House.
117	Leih, Lee.	Ly.	Lie.	Erect. To Erect, to Establish, to Elevate. High, Upright, Firmly, Fixed.

Class VI. Characters formed by Six Strokes.

No.	Portugcese.	French.	German.	Explanation.
118	Chuh, Cho.	Tcho.		Bamboo, Reed.
119	Me.	My.	Mi.	Paddy or Rice, Husked or ground Rice.
120	Meih, Sze, See.	My.	Mie.	Silk-Thread. Silk.
121	Fow, Feu.	Feou.		Crockery, Vessels of Earthenware.
122	Wang.	Ouang.	Vang.	A Net.
123	Yang.			A Sheep, Lamb, Goat, or Kid.

No	Portuguese.	French.	German.	Explanation.
124	°Yu.			Feathers, Wings.
125	Laou.	Lào.		An Old Man, aged.
126	Urh.	Eûl.	Ulh.	A Whisker, and, but, conjunction.
127	Luy, Lae.	Loüy.	Lûl.	Handle of a Plough, Harrow, Hoe, an Instrument for cutting the Earth.
128	Urh.	Eûl.	Ulh.	The Ear, To Hear, To Understand.
129	Yu.			A Pencil, obedience, to obey. An auxiliary character whose derivatives signify to Draw, Paint, Write, &c. Hager.
130	°Jow, Jo.			Flesh.
131	Chin.	Tchin.		A Servant, a Minister of State, a Public Servant, a Vessel, Key of Magistrates, Ministers, and Mandarins.
132	Tsze, Tsco.	Tsé.	Su.	Self, Himself, Precedency, From, out of.
13	Che.	Tchy.	Chi.	Reaching to, at, to the extreme point, even to, Summit, Solstice, arrive at, very.
134	Kew.	Kièou.	Kiéu.	A Mortar.
135	She.	Che.	Xe.	The Tongue.
136	Chuen.	Tchouen.	Chuen.	To Disturb, Error, Dance, to Err, Contradict.
137	Chow.	Tcheou.	Chen.	A Boat, a Ship, a Girdle.
138	Kan.	Kén.		Disobedient, Force, Strength, Robust, Solid, Firm. Limit, Boundary, to stop.
139	Sih, Se.			Colour, Figure, Luxury.
140	°Tsaou.	Tsao.	Sao.	Herbs, Plants, Grass, Flowers.
141	Hoo.	Hou.	Hû.	A Tiger.
142	Chung.	Tchong.	Hoei, Chûng.	An Insect, Worms. General name for Animals.
143	Houe.	Hue.	Hioe.	Blood.
144	Hing.			To Go, to Walk, to Do, Proceed, Make, Operate, the Elements.
145	E.	Y.		Clothes, Garments, Outer Habit or Vest, to Clothe.
146	Ya, Hea.	Hia.	Si, the West.	To Cover.

Class VII. Characters formed by Seven Strokes.

No.	Portuguese.	French.	German.	Explanation.
147	Keen.	Kién.		To See, to Look on, Perceive.
148	Keo, Kio.	Kio.		A Horn, a Corner.
149	Yen.			Words, to Express.
150	Kuh, Ko.			Aqueduct, a Valley.
151	Tow.	Teóu.	Teú.	Pulse, Leguminous Plants as Peas or Beans.
152	Shc.	Chy	Xi	A Hog, Swine.
153	Che.	Tchy.	Chi.	Reptile, Animals covered with hair, or without feet, Worms.
154	Pei.	Péy.	Poéi.	Pearls, Sea-Shells, a Precious thing.
155	Chih, Chay.	Tchy.	Che.	Carnation-Colour, Purple.
156	Tsow.	Tseóu.	Ceù.	To Walk, to go hastily, to Run.
157	◦Tsuh, Tso.		So.	The Foot, the Feet, Rich, Wealthy, to Suffice.
158	Shin.	Chin.	Xin.	The Body, I myself.
159	Chay, Keu.	Tche.	Che, Kiu.	A Wheel, a Carriage, a Mill; to be carried.
160	Sin.			Bitter, Distressing.
161	Shin.	Chin.	Xin.	To Tremble. The Chinese hour of the morning from 7 till 9.
162	◦Ch'ho, Cho.	Tcho.		Walking Swiftly, to Run.
163	◦Yih, Yay.	Y.	Ye.	A City, Village, or Camp. An Enclosure within Walls.
164	Yew.	Yeóu.	Yeù.	Matured, New Wine, Finished, Liquor. The hour from 5 to 7 in the Evening.
165	Péen, Tsne.	Pién.	Say.	To Pluck, or Tear asunder as leaves or fruit, to separate.
166	Le.	Ly.	Li.	About one fourth of an English Mile; Place, Habitation, Village. A Chinese Mile.

Class VIII. Characters formed by Eight Strokes.

No.	Portuguese.	French.	German.	Explanation.
167	Kin.			Metal, Gold.
168	◦Ch'hang, Chang.	Tchang.		Long, Extended, Remote, Great, Lasting, Always.
169	Mun.	Mén.	Muén.	A Door, a Gate, chiefly the exterior.

No.	Portuguese.	French.	German.	Explanation.
170	Fow, Feù.	Feòu.		A Mound of Earth without Stones.
171	Tae.	Tày.	Tai, Y.	At, or to a certain point, Highest, Extremity, to Extend, what remains.
172	Chuy, Chue.	Tchquy.	Chui.	Short-tailed Birds, Wings, Union, Conjuncton.
173	Yu.			Rain.
174	Tsing.		Sing.	Azure, Blue Colour.
175	Fei.	Fey.	Fi.	False, Not, No, Negative.

Class IX. Characters formed by Nine Strokes.

No.	Portuguese.	French.	German.	Explanation.
176	Meen.	Miên.		The Face, Surface, Outside.
177	Kih, Ke.			Untanned Leather, Skins, Defensive Armour.
178	Wei, Vei.	Oëy.	Goei.	Back to Back, Soft Leather, Tanned Leather, prepared Hides or Skins.
179	Kew.	Kiéou.	Kieù.	Leeks, Garlic.
180	Yin.	Yu.		Sound, voice.
181	Hee.	Hie.	Ye.	The Head.
182	Fung.	Fong.		The Wind.
183	Fe. Fei.	Fèy.	Fi.	To Fly, a Wing.
184	Shih, Shay.	Chy.	Xe.	To Eat, to Drink, Food.
185	Show.	Cheòu.	Xeù.	The Head, Beginning, Origin
186	Heang.	Hiang.		Smell, Fragrance, Odour.

Class X. Characters formed by Ten Strokes.

No.	Portuguese.	French.	German.	Explanation.
187	Ma.			A Horse.
188	Kuh, Kwo.	Ko.		A Bone.
189	Kaou.	Kao.		High, Loftiness, Lofty, Eminent, Noble, Excellent.
190	Penou.	Pieou.	Piéu, Piao.	Long Hair, Beard.
191	Tow.	Teòu.	Teu.	To Fight, a Battle, Quarrels.

No	Portuguese	French	German	Explanation
192	Ch'hang, Chang.	Tchang.		Fragrant herbs of which Sacrifical wine is made. To Sacrifice wine.
193	Leih. Lee.	Lx.	Lie.	A Perfume or Incense pot, a Vase, a Tripod.
194	Kwei.	Kouey.	Kuei.	An Evil Spirit, a Ghost, an Imp, a Genius, a dead Person.

Class XI. Characters formed by Eleven Strokes.

No	Portuguese.	French.	German.	Explanation.
195	Yu.			A Fish.
196	Neaou.	Niao.		A Bird.
197	Loo.	Lou.	Lù.	Insipid, Tasteless, Salt, Salt Earth, Barren Ground.
198	Luh, Lo.			A Stag.
199	Mih, Me.			Wheat, Barley, Grain.
200	Ma.			Hemp.

Class XII. Characters formed by Twelve Strokes.

No	Portuguese.	French.	German.	Explanation.
201	Hwang.	Hoâng.		Yellow, Yellowness.
202	Shoo.	Chù.	Xù.	Millet, a Species of Maize.
203	Hih, He.			Black, Blackness, Obscurity.
204	Che.	Tchy.	Chi.	To Embroider, Embroidery.

Class XIII. Characters formed by Thirteen Strokes.

No	Portuguese.	French.	German	Explanation.
205	Mung.	Mong.	Min.	A Toad, Sea-Monster, Turtles, Frogs, Worms.
206	Ting.			A Tripod, a Vase, to Renew.
207	Koo.	Kou.	Ku.	A Drum, to Drum.
208	Shoo.	Chù.	Xù.	A Mouse, Mice, Rats.

Class XIV. Characters formed by Fourteen Strokes.

No	Portuguese.	French.	German.	Explanation.
209	Pe.	Py.	Pi.	The Nose, Nostrils.
210	Tse.	Tsy.	Si.	Even, to Arrange or Adorn, an Ornament.

Class XV. Character formed by Fifteen Strokes.

No	Portuguese.	French.	German.	Explanation.
211	Che.	Tchy.	Chi.	The Teeth, the cutting Teeth.

Class XVI. Characters formed by Sixteen Strokes.

No	Portuguese.	French.	German.	Explanation.
212	Lung.	Long.		A Dragon.
213	Kwei.	Kouey.	Kuei.	A Tortoise.

Class XVII. Character formed by Seventeen Strokes.

No	Portuguese.	French.	German.	Explanation.
214	Yo.			A wind Instrument of music, a Pipe, Flute, Organ. Also a measure containing 100 grains of Millet.

*** In those places where the French and German columns are left blank, there is no variation in the orthography of the word.

Having thus concluded our description of the Chinese Key-Characters, we next proceed to give some translations and to notice a few of the peculiarities of the language. At the upper part of Table II. No. I. Vide end of the Article, is a ludicrous tale extracted from Dr. Morrison's *Chinese Dialogues;* for the reading of which the figures down the right hand side, and on the tops of the columns, are intended as directions, Vide also ante, page 369. Freely translated, the tale alluded to as follows.

"A Surgeon who was going to remove said to his neighbours, 'I have hitherto given you much trouble, and now on parting have nothing to give in token of respect. I will present each of you with a packet of Medicine.' The neighbours excused themselves by saying they had no complaint. The Doctor said, 'only take my physic, and I will warrant you will soon be sick enough.'"

This paraphrase was requisite to elucidate the following, which is a literal translation placed beneath the Chinese words in Roman letters, all arranged according to the positions of the characters in Table II.

*Heang**	*yue.*	*lin*	*sze*	*wei*	*keu*	*tseen*	*E*	*Yih*
A while past	saying.	neighbours	†four	addressed	dwelling	moving.	Doctor	A or one
king	*peih*	*tso*	*k'ho*	*wuh*	*Woo*	*keaou*	*ta*	*lae*
respect	separating	make	can	thing	No	trouble	give (you)	come
tsze	*shay*	*Lin*	*teih*	*yih*	*yo*	*fung*	*wei*	*Mei*
declined	my	Neighbours	paper	one	medicine	present	person	Each

wo	*leaou*	*keih*	*tan*	*yue*	*E*	*ping*	*woo*	*e*
my	have	eat	but	said	Doctor	sick	not	by
Jay	*ping*	*k'he*	*sang*	*hwuy*	*jen*	*Tsze*	*yo*	*teih*
come	disease	up	produce	happen	truly	Self	physic	true

It is evident that in the above there is a great want of particles or connecting words, and a redundancy of other minor expressions; and this is the case in the greater part of the ancient and the Eastern languages, for in general they possess words only as the signs of things, not as connecting members of construction or discourse. Hence, too, arises that almost unintelligible English which is spoken by natives of China and Africa, when they first attempt to learn the tongue, and which they can never wholly forget. They imagine that it is with the language of this country as it is with that of their own, that a few principal words and general features of a sentence are sufficient to convey it with clearness, if not with elegance: but at the same time they overload their discourse with the lesser parts of speech improperly placed. Before passing on to a few other examples of Chinese Idioms, it will be proper to give some instances of discovering the key of a character, and of searching it out from the Dictionary: these shall be taken from the first line of the foregoing story. It should be observed firstly, that the characters in this specimen differ from those in the Table of Keys already given, because the former are in the *Sung-pan* form, a stiff character used in printed books, and the latter are the characters of *Sha-muh:* this explanation will account for some of the variations which may be observed from the original radical letter. *Yih* or *Yay*, is the first character in the Specimen No. I, on Table II; and it is its own key. Vide Table I. No. I. page 368 ante. *E*, a Physician, will be found under the 164th key, *Yew*, which forms the whole of the lower half of it, and eleven additional strokes are placed above. *Tseen*, to move, or moving, the third character, will be found under *Cho*, the 162nd Radical, a variation of which occupies the bottom and the left hand of the character; and it has 12 additional strokes. *Keu*, a dwelling, the fourth character, belongs to *She*, the 44th Radical, which appears at the top and left hand side; and it has 4 additional strokes. The fifth character, *Wei*, to address, is formed from *Yen*, the 149th key, which is shewn on the left hand half of the letter; and it has 9 additional strokes. The sixth character *Sze*, Four, here placed to signify the neighbours on all sides, comes from the 31st

* Chinese point, shewing a portion of the sentence to be complete † A Chinese Idiom to signify all around or on every side.

Radical *Hwuy*, which forms the outer square, with 2 additional strokes placed within. The seventh character *Lin*, Neighbours, is derived of *Yew*, the 163rd Radical, a varied form of which appears on the right hand half of the letter; and it has 12 additional strokes. The Eighth character *Yue*, to say or saying, is composed of the 73rd Radical in its own unornamented form. *Heang*, time past, or heretofore, is the ninth and last character of the first line, which consists of *Kow*, the 30th Radical, standing alone in the centre, with 3 additional strokes drawn around it. These examples will be sufficient for the present purpose; but it should be observed, that it is of considerable assistance to the young Chinese Student, to practise searching in a dictionary for characters the sound of which he already knows, and to refer to a table of Radicals and words only, whenever he is at a loss. No X. on Table II., is a native expression sometimes used for the Country of China, namely *Chung-kwo*, or the Middle Nation. No. XI. is *Lun-yin*, i. e. "Silken sounds evolved with consummate order and harmony." an expression used for the Imperial Mandates and Official Declarations. A similar phrase is used to express the classical examination of literary candidates, *Sze-lun*, or the unfolding of the silks. In No. XII, is shewn the style of address to Officers of the first and second rank in China, and which is also used by courtesy to those of the third; the characters signify *Ta-yin*, or Great-Man, and they are sometimes used for the title Sir. It is common for the Chinese when conversing of or with a person who is older or superior to themselves, to avoid all personal pronouns, as I, Me, &c. and by a periphrasis which is far from being inelegant, modestly to allude to themselves. Thus they will say *Heo-sang*, your pupil, Vide No. XIV. *Wun-sang*, Evening-born, and as in No. XIII, *Kea-foo*, or House-family-father, for my father. No. XV. shews a broad tone which may be expressed by *Ah*, used principally by servants to signify their understanding of orders; it is also sometimes translated Yes. No. XX. shews another specimen of Chinese idiom in the use of numbers: the characters signify, "*Wan sze yew t'heen, mo keang kew*," literally, Ten thousand affairs from heaven not violently to be sought; and freely rendered, Every thing is from Heaven, do not seek to obtain by violence. In No. XXI. is a specimen of a Chinese interrogative, namely, "*Mun shang yew jin mo?*" literally, Door above have man what? or, in free translation, Is there any one at the gate? No. XVI. contains the forms of *Yih*, *Choo*, and *Shih*, the 1st, 3rd, and 24th Radicals in the *Chung-Ting-Wan* form, explained on page 364 ante. In No. XVII. is *Fang*, the 22nd Radical drawn in the same form; and the last four characters in No. XXII, are the *Chuen-the* forms for *Hwang*, More or farther: *Seuen*, to Revolve

between two: *Urh*, Two or both, the seventh Radical: and *Ya*, Ugly. In Nos. XVIII. XIX. and the first character in XXII. are shewn the *Tsaou-tsee* forms of *Hwang*, *Seuen*, and *Ya*, as before. All these expressions, significant of the various kinds of writing in China, have already been explained on pages 363-365.

All words in the Chinese language are indeclinable, and their quantity is denoted by a numeral and a word agreeing with some property of the noun to be numbered; thus *Che*, is the concordant word, when speaking of a ship, or a quadruped; as *Yay Che Chuen*, one single ship, *Yay Che Keu*, one single dog. If the noun be in the plural, the numeral only is altered, and the agreeing word retained, as in three ships of war have arrived: *Ping chuen san che taou leaou*, Soldier ship three single ones come to have. Numbers themselves are expressed by three different series of characters; as the plain hand, a formal hand for legal writings to prevent alteration in quantity, which is similar to the English custe of using words, and a running hand, which as it is employed chiefly in accounts, may be called the figures of the Chinese. These last are shewn in No. III. Table II. and the following is a list of their names and value placed in the same order.

she	*keeu*	*pa*	*tse*	*ie*	*woo*	*see*	*san*	*urh*	*Yay*
10	9	8	7	6	5	4	3	2	1
Urh-she	*She-keeu*	*She-pa*	*She-tse*	*She-le*	*She-woo*	*She-see*	*She-san*	*She-urh*	*She-yay*
2x10, 20	19	18	17	16	15	14	13	12	10x1, 11

Urh-She-Yay, form 21, and *San-She*, or 3x10 are 30. *Yay-Pe*, stand for 100, that is, *Yay*, one, and *Pe*, a centimal power. *Yay-pe-ling-yay*, are 101; as *Yay* one, *Pe* the word denoting hundreds, *ling* a cypher, and *Yay*, one. *Yay-tseen*, are 1000. Ordinal numbers are produced by prefixing *Te* Order, to those before-mentioned; as *Te-san*, Order Third. In Chinese writing there is seldom any Punctuation; but it is general in Historical Books and Commentaries. The points which are used are two: One is a plain point or dot, as may be seen in Table II. No. I. appended to the lower parts of the 8th, 18th, 24th, 30th, 32nd, 38th, and 45th characters. This is called *Tow*, a full point, or stop in reading; and it is placed between the characters of a sentence, to part off any member of it: it may be considered as equivalent to our comma. The second point is called *Keuen-twan*, or a round cut off. Its form is that of a small capital o, and it is placed by the side or below the final character when the sense is complete; as "*Yo che we lae. seen chae wang* o" Desire to know not come, first examine already past. or He who wishes to know the future, must first examine the past.

On pages 363-364 ante, we have mentioned that the earliest ideas of Chinese characters were supposed to have been taken from the marks on the shell of a Tortoise, and that some of the later ones were adopted from the letters

engraved on the fragments of ancient metal vases. On Table II. Nos. II. and IV. are illustrations of both of these circumstances. The former is a reduced fac-simile from a Chinese Antiquarian Work, in small Folio, as it is shewn on the left hand side of the figures, endorsed, *Sung Wang Puh Chae Chung Ting Foo-Kwa Shih: i. e. Sung Wang-Gan-Shih*, returned order, Bells and Tripods supported on stone engraved letters on utensils; or In the Dynasty *Sung*, *Wang-Gan-Shih*, (a famous scholar and statesman,) renewed the order of the letters engraven upon Bells and Tripods, and supported upon stone. The Book is also marked, *Fac-similes of the Characters on Ancient Bells, Vases, &c.* The Characters on the figure itself are in the Ancient *Chung-Ting-Wan* form, and most probably signify *Shing Fung Yih Kin Shih Urh Leang Shih Urh Choo Yung Yih Shing: i. e.* Sound seal one *Kin*, ten two *Leang*, ten two scarlet contain one *Shing*: or A voice, (viz. letters), is sealed up in this *Vase* (a fragment of which it was), of one cutty twenty *Leang* (weight): to contain twenty *Shing* of scarlet. It is not likely from these inscriptions, that the rude figure in No. II. can be meant for the Tortoise whence some of the more ancient Chinese characters were taken, as it has been supposed; they plainly evince that it was a fragment of a metallic vase, bearing the form here delineated. No. IV. on Table II. contains a representation of the *Testudo Scripta* or Lettered Tortoise, drawn from Dr. Shaw's *General Zoology*, Vol. III. Part I. London, 1802. Octavo, page 56, plate 12. Schoepf describes the animal as being a Tortoise with an orbicular depressed shell, with all the scutella marked by variously-formed characters, and the twenty-four marginal pieces spotted beneath. The delineations on this creature's shell, might by a vivid fancy be formed into letters, and it is certainly not improbable that *Ts'hang-hee*, already mentioned, might have derived his characters from such a source. It has also been noticed upon page 361, ante, that some have supposed that the Chinese are descended from one of the Tatar Nations that came down from the Steppes of Imaus; which are the vast Plains and Flats, situate in that extensive chain of mountains, traversing Independent and Russian Tartary. This argument receives some support, from a similarity which is to be found in the language of some of the Tatar nations bordering upon China, and the speech of that Kingdom itself. Mons. L. Langlès, in his *Alphabet Mantchou, rédigé d'après le syllabaire ex le Dictionnaire universel de cette langue;* 3rd. Edit. Paris, 1807, Octavo, page 159, has the following Tartaric proverb, which is given in the original characters on Table II. No. XXIII. *Mantchou pitké-bé ourounakoú ourébou akoútsi Nikan pitké-bé khavoukiumé ketoukélémé moutempio:* that is to say, 'Accustom thyself readily to

read the books of the Mantchous; (for) if not, how shalt thou well understand those of the Chinese? In these words then there seems an inferred acknowledgement that the Chinese language was so much augmented by the Tataric, for its original is doubtless the Hebrew, that it is as it were the key of it. From the manner in which the *Mantchou-Tataric* writing is formed, and it appearing, when, viewed horizontally, somewhat like the Syriac, it has been supposed, although with considerable doubtfulness, that this branch of the Tatar characters, was derived from the Syrian; and by this hypothesis, another link is created, connecting the Chinese and the Hebrew. It cannot however be conceived that the speech of China either is in reality, or approaches to the original Hebrew as spoken by Adam and Noah: but it will perhaps be admitted, that there is enough of the Hebraic character still to be found in it, to identify its descent from that universal parent of languages. Beside the authorities already cited, the following works contain the best information on the subject of the Chinese tongue, whence the above article has been compiled. *Encyclopedie Francaise*, Livourne, 1772, Folio: *An Explanation of the Elementary Characters of the Chinese; with an Analysis of their Ancient Symbols and Hieroglyphics*, by Joseph Hager, D. D. Lond. 1801, Folio: *Dictionnaire Chinois, Francais et Latin, Publie d'apres l'ordre de sa Majesté l'Empereur et Roi Napoleon le Grand; Par M. De Guignes*, Paris, 1813, Folio: *A Grammar of the Chinese Language*, by the Rev. Robert Morrison, Serampore, 1815, Quarto: *A Dictionary of the Chinese Language*, in three Parts, by the Rev. Robert Morrison, Macao, 1815, *et seq. an.* Quarto. *Dialogues and detached sentences in the Chinese Language; with a free and verbal translation into English*, Macao: 1816, Octavo: the Article China in the *Supplement to the Encyclopedia Britannica*, Quarto.*

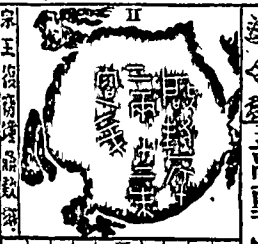
* The Indo-Chinese Nations are those which lie between India and China, and the greater part of the Islands of the Eastern Sea. Their languages are divided into two general classes, polysyllabic and monosyllabic, and the Pali or Bali tongue, which does not exist as a vernacular speech, but is used like the Sanskrita, in the sacred compositions of the Budd hist sect. The Malayn is placed at the head of the polysyllabic languages, although in some instances it is monosyllabic. It is extensively spoken in various dialects, and is so soft in it's construction that it is sometimes called the Italian; it has a singularly close affinity with the Sanskrita. An excellent account of it may be seen in the tenth volume of the Asiatic Researches, page 158, in a paper "On the Languages and Literature of the Indo-Chinese Nations," by Dr. John Leyden. The other polysyllabic languages are those of Java, the Bugis, spoken in the Island of Celebes, the Bima, the Batta, and the Ta-Gala. The monosyllabic languages are the Kukheng, the Barma, the Mon, the Thay, the Khohmen, the Law, the Anam, and the Pali or Learned language.

TABLE II.

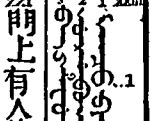
I

9	8	7	6	5	4	3	2	1	
向	日	鄰	四	謂	居	憑	醫	一	1
敬	別	倣	可	物	無	攪	打	來	2
辭	舍	鄰	帖	一	藥	奉	位	每	3
我	了	吃	但	日	醫	病	無	以	4
來	病	起	主	舍	然	自	藥	的	5

II



IV



ALPHABETS OF INDIA.

SANSKRITA.

At the head of all the languages of India, is place most comprehensive and powerful tongue; which volved in the profoundest darkness as to its origin, a its descent is connected with so many other dialects, render the tra ing of its history at once uncertain and cult in the attemp unsatisfactory and erroneous in conclusion. Dr. Mars.. nan, in his *Clavis Sinica*, as we already mentioned in the Chinese Article, has denied there exists any relationship between the Sanskrita ton and that of China; because the former is polysylla while the latter is confined to words of one syllable. latter is indeclinable in every state, while the former var sometimes in a thousand ways from the original Dha or Root; and finally there are sounds in the Sanskrit phabet, which the oracular organs of a Chinese could be enabled to pronounce. Notwithstanding all thes culties, Dr. Marshman knew, that in the first centu A. D. when the Indian Priests of Budh were permitted enter China, they endeavoured to introduce both their ligion and their language; and he found in the Dictio of *Cang-he*, the Deva-nagari series of characters; whic that hereafter given, placed at the commencement o It is however stated in the preface to that work, tha was a system brought from the West, (Hindoostan), wh the learned of China could never be induced to adopt. H then proceeded to actual experiment upon the two lan guages, by taking the Ramayu, and the most ancient Sans krita poem, and the She-King, the most ancient one of th Chinese, and in ten pages of the former he found only 1 monosyllables out of 459 words; and out of these thirteen, seven only occured in the She-King. As his object was to identify the purity of the Chinese, he next took four pages of the Mahabaru in the Bengalee dialect, which is derived of the Sanskrita, and in 265 words he discovered 7 monosyllables, of which 3 only were Chinese.

But although it is comparatively easy to say what the Sanskrita language did not descend from, it is next to impossible to ascertain from whence it did; since Arabic, Persian, and even Latin and Greek words, are to be found in it. Its very high antiquity however, is not to be doubted, since many traces of it are to be found on coins and seals, and more particularly in some volumes belonging to the learned Rajah of Kishnagur, wherein it was stated, that a communication formerly existed between India and Egypt, and wherein the Egyptians are described as disciples rather than instructors. Without implicitly receiving this asser-

e Sanskrita tongue doubtless extended over a very rable part of Asia; indeed vestiges of it are to be n almost every district, however remote; and who- well acquainted with it, has acquired more than a atory knowledge, of a large proportion of the verna- dialect of India. The characters of numerous tongues, lso derived of the Sanskrita; but though its influence wonderfully extended, as a separate language it is ted to the libraries of the Brahmans, and appropriated to the records of their religion. The term Sanskrita nvented to distinguish that branch of the Hindu lan- e properly so called, from the Prakrita, or the dialect ken by the common people: it is a compound particle lying altogether or completely, done, or formed, and n applied to a language it means polished. In the dif- nt provinces of India there are not only several dialects, there are also several different kinds of characters, but *Deva-Nagari*, which are the following, are those in h the Sanskrita is usually written and the most elegant rm.

All languages of the Hindu class, are read from left to ht; and the Alphabet by which the Sanskrita is taught, anged on the following plan. The letters themselves alled *Karah*, make or form, as *A-Karah*, *Ka-Karah*, and although they would amount to fifty in number, their simple articulations are not more than 28, of which are vowels and twenty-three are consonants. The fol- wing five simple vowels are represented by the characters express their long and short sounds, similar to the ar- ngement of the Abyssinian alphabet.

Power.	a	i	u	ri	lri
Short..	अ	इ	उ	ऋ	ऌ
Long ..	आ	ई	ऊ	ॠ	ॡ

There are also four compound vowels or dipthongs, which are thus represented :—

ए ऐ ओ औ

E short Ai O short Au

The thirty-four consonants contain only twenty-three separate sounds; as the remainder consists of ten aspirates

and one letter compounded of two others. This will be more readily shewn in the following list, in which it will be perceived that in the first twenty-five, ten are Aspirations of the letters which immediately precede them; and the last character *Ksha*, is an union of *Ka* the first, and *Sha* the thirty-first letters. The ensuing table is the arrangement of the Deva-nagari consonants.

क	ka	ख	kha	ग	ga	घ	gha	ङ	nga
च	cha	छ	ch'ha	ज	ja	झ	jha	ञ	nya
ट	ta	ठ	tha	ड	da	ढ	dha	ण	na
त	ta	थ	tha	द	da	ध	dha	न	na
प	pa	फ	pha	ब	ba	भ	bha	म	ma
य	ya	र	ra	ल	la	व	va		
श	sa	ष	sha	स	sa	ह	ha	क्ष	ksha

Like the other Eastern languages, some letters vary in shape, according to their positions, as Initials, Medials, or Finals. The characters for the vowels already given were the Initial forms of them, and the following marks are added to, or put for them, when they stand as Medials, or Finals.

ा ि ी ु ू ृ ॅ े

A *I* short *I* long *U* short *U* long *Ri* short *Ri* long

ॢ ॣ ं ँ ो ौ

Li short *Lri* long *E* diphthong, short. *Ai* diphthong. *O* diphthong, short. *Au* diphthong.

Every open consonant not followed by a vowel, has the sound of A attached to it; but it frequently occurs that a word ends with a consonant, or that two or more consonants meet together without an intermediate vowel. In the former case the vowel is cut off, with a small inclined line affixed to the lower part of the character; and in the latter instance, a compound character is formed, somewhat on the plan of the ligatures in Greek, or the connected letters in Short-hand. These compounds are formed in several different ways: as by putting one letter beneath the other, by blending them together, or as it is most usual, by placing them in their natural order, with their bodies and heads in contact, and omitting the final perpendicular stroke of every letter which possesses one, excepting in the last. A few instances of these compounds are annexed.

क्क	क्त	क्र	क्य	थ	च्च	च्च्य
kk	kt	kr	ky	ch	chy	ch'hy
ज्ज	त्त	त्र	द्ग	द्ध	द्म	द्व
jj	tt	tr	dg	ddn	d m	dw
प्र	भ्र	ष्ट	ष्ठ	ल्ल	ष्य	स्र
pr	mr	sht	shth	shl	shy	rs

There are also certain other extraneous characters used in the Sanskrita language, which are as follow. In the divisions of verse, as in the ensuing extract from the introduction to the Hitopadesa, a single mark is placed at the conclusion of an Hemistich, and a double one at the end of a distich.

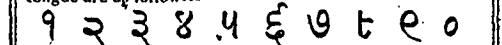
"A wise man should consider science and wealth, like one not subject to sickness and death. ।

He should practise the duties of religion, as one seized by death in the hairs of the head." ॥

Another additional character is the following ऽ which is frequently used as an apostrophe, to shew that a vowel has been dropped by rule.

This character ◌ं is occasionally placed over a consonant, which by the rules of orthography has been substituted for a nasal letter.

A final HA, is sometimes represented by this mark ः which is called Visargah; and one such point, placed over a letter, is called Anuswarah, denoting a final nasal. The vowels have also marks to distinguish the tone with which they are to be pronounced: thus a short *perpendicular line* placed on the *top* of a vowel, signifies that it is to be enunciated *high*; a *parallel line* drawn *beneath* a vowel, alters it to a *low* sound; a *semi-circular* line *above* the letter, unites the foregoing; and these may be considered as equivalent to the original purposes of the acute, grave, and circumflex accents, which are used in English. To regulate the length of pronunciation, the vowels of the Sanskrita have sometimes three horizontal lines drawn above them, or a figure of three, as given below, placed after them; either of which signifies that they are to be held longer than usual, as in calling or crying. The Numerals used in this tongue are as follow---



1 2 3 4 5 6 7 8 9 0

Then, as in most other languages, the Cardinal numbers count ten and one-eleven, &c. and nineteen is frequently expressed by "less twenty;" then twenty, one twenty, two twenty, &c. to (one) less (than) thirty, and so of the rest.

Such then is a very brief explanation of the principal characters which are used in that powerful, but difficult language the Sanskrita; the letters for which were in the handsomest manner lent for the present work, by Dr. Charles Wilkins, the erudite Librarian to the Honourable the East India Company; from whom also, the ensuing Bengalese types were obtained. From the same source likewise, the preceding detail of the Sanskrita tongue has ultimately been deduced; since the chief authority used in the present article, was the admirable *Grammar of the Sanskrita Language by Charles Wilkins, L L. D. F. R. S. Lond:* 1808, *Quarto:* in addition to which however, the Sanskritan student will derive much benefit from *Cosha, or a Dictionary of the Sanscrit Language by Amerhu Sinha.* With an English Interpretation, and Annotations by H. J. Colebrooke, Esq. *Serampoor*, 1808, *Small Folio:* and Dr. Wilkins' edition of the *Heeptopades Veshonoo Sarma*, translated from the Sanskrita, *Octavo.* Dr. Wilkins, to whom the Oriental languages owe so much, has not only excellently displayed the genius of this tongue for the benefit of European students, but he has also given the most elegant examplars of the *Deva-Nagari* letter, in

the types which we have already exhibited. When he had compiled from the most celebrated native Grammars and Commentaries, a work entirely new to England, on the structure of the Sanskrita tongue, he cut steel letters, made punches, matrices, and moulds, and cast from them a fount of the Deva-nagari Character, his only assistance being the mechanics of a country village. Early in 1795, he had commenced the printing of this laborious undertaking in his own dwelling house; but, on the second of May in that year, the whole of his premises were destroyed by fire; his books, manuscripts, and the greater part of the Sanskrita punches and matrices were preserved; but the types which had been prepared with so much labour, were all either lost or rendered useless. This is a circumstance not less interesting as a typographical anecdote, than it is as an instance of honourable and erudite industry; it is like Mercator engraving and colouring his own Maps, or Aldus and Stephens working at their own presses and letter-cases. About ten years afterwards, the Court of Directors of the East India Company encouraged Dr. Wilkins to resume his labours, and to cast other types; as the study of the Sanskrita had become an important object in their new College at Hertford. The work which followed, from the Preface to which this account has been abstracted, gave abundant proof how well the Directors had made their choice; and as that was the earliest, as well as the best work on the subject in this country, Dr. Wilkins must ever be considered as the Father of the Sanskrita language in England.

Bengalese.

Exclusive of the Sanskrita language, there are three different dialects used in the Kingdom of Bengal: the Persian, which will be treated of hereafter, the Hindoostanic, and the Bengalese, properly so called; each of which has its own appropriate department in the affairs of the country. The Hindoostanic, or Indian tongue, seems to have been spoken for ages throughout Hindoostan proper; and it is a derivative of the Sanskrita, with which it has the same connexion, as the modern French and Italian languages have with the Classical Latin. Almost universally, the same sounds are applied to the same words and ideas, but in their inflexions there is a considerable difference. The Hindoostanic characters are also the same with those of the Sanskrita, but they are of a ruder shape. The original Hindoostanic tongue has not preserved either its purity or its extensive influence down to the present time: for the modern inhabitants of India, differ from the ancient ones both in speech and in religion. The Gentoos have sealed up the mysteries of their faith in Sanskrita; and

their most eminent Lawgivers have endeavoured, under severe penalties to both the Tutor and the Pupil, to confine the study of that language to their own principal tribes only. The elegant and erudite Halhed supposes, however, that when the Mahometan invaders first settled in India, they, for the effecting of a communication with the Natives, applied themselves to study their dialect, but that some of the more abstruse Sanskrita terms, being rendered unintelligible by the reserve of the Gentoos, those foreigners recurred to, and ultimately naturalized, their own native expressions. A repetition of these causes, introduced a multitude of exotic words into the pure Hindoostanic tongue: but while its original phrases were thus altered, the grammatical principles of the language remained the same; and at the present time, those persons are considered to speak the modern Hindoo most elegantly, who blend with pure Indian Verbs, the greatest number of Persian and Arabic Nouns. Of Indian Characters it is supposed that there are seven different species, all deduced from the Sanskrita, and all comprised under the general expression Naagoree, or Writing, of which the pure Sanskrita itself is denominated Daeb Naagoree, or the Writing of the Immortals. Another branch of the Sanskrita is the Bengalese Characters, which "probably," says Halhed, "is one of the most ancient modes of writing in the world." In this general alphabet the Bengalese Brahmins have their Sanskrita books copied, after which they are transcribed into the Daeb Naagoree Character for their own perusal.

The Bengal Alphabet consists of the following fifty characters, which are thus divided into Vowels and Consonants.

VOWELS.

অ	o	আ	aa,	ই	ee	ঈ	ee
উ	oo	ঊ	oo	ঋ	ree	ৠ	ree
ঌ	lee	ৡ	lree	এ	a	ঐ	i
ও	o	ঔ	ou	অং	ung	অঃ	oh

The vowels vary in figure when in composition, as in the Sanskrita.

CONSONANTS.

ক	ko	খ	k,ho	গ	go	ঘ	g,ho	ঙ	ngoo
চ	cho	ছ	ch,ho	জ	jo	ঝ	j,ho	ঞ	gnee
ট	to	ঠ	t,ho	ড	do	ঢ	d,ho	শ	aano
ত	to	থ	t ho	দ	do	ধ	d,ho	ন	no
প	po	ফ	p,ho	ব	bo	ভ	b,ho	য	mo
য	jo	র	ro	ল	lo	ব	wo		
শ	sho	ষ	sho	স	so	হ	ho	ক্ষ	khyo

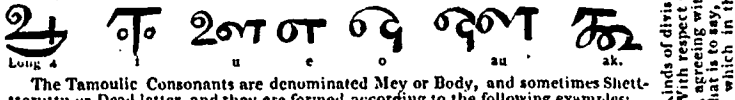
These are also used in the Bengalese language, eleven subservient marks or signs, denominated P,holaa, or adjuncts; to prevent the too frequent repetition of the short vowel, which is dependent on all the consonants of this tongue. These P,holaa may be attached to all the foregoing consonants; and they consist of small arbitrary marks significative of some vowel, which are placed above or beneath the other characters. The arrangement of the Bengalese numbers is exactly similiar to that used in the Sanskrita. The natives of Bengal write with a peculiar slender but tough reed, common through the East, which they shape somewhat similiar to an European pen. This they hold in the closed hand, as people of China do their writing pencils, already mentioned on page 369, ante. The nib or point of the pen, is turned downwards towards the wrist, the thumb pointing upwards, and lying on the pen with its whole length, keeps it firm against the middle joint of the fore finger. The posture which the Bengalese use to write in, is very different from that of the Europeans; as they have no chairs nor tables, they sit down, either upon their heels or their hams, and the left hand held open is used as a desk

to support the writing paper, which is kept in its place by the thumb laid over it. Thus, a large sheet of paper is never used, without its being folded down to a small and convenient surface. It will have been observed that the Bengalese letter, no less than the Sanskrita, is difficult to be imitated in type, on account of the intricacy, the inequality, and the various combinations of the characters, which differ very considerably, when they are placed in different positions. After Mr. Bolts, who was supposed to be every way competent to the fabrication of a series of Bengal types, had entirely failed, Dr. Wilkins, who was then in the Civil Service of the Hon. the East India Company in Bengal, undertook their construction, and with what success will be seen by the foregoing beautiful specimens. As in the manufacture of the Sanskrita types, he united in himself the various and opposite occupations of Metallurgist, Engraver, Type-Founder, and Printer: and these products of his highly meritorious labours, he has liberally permitted to appear in the present work. The authority consulted for the above notice, has been the admirable work of Nathaniel Brassey Halhed, Esq. entitled "*A Grammar of the Bengal Language. Printed at Hoogly in Bengal*, 1788," *Quarto*.

TAMOUL.

THIS language, which is of the same class as the two last treated of, is spoken in the division of Mysore, in the South East part of Hindoostan, between Madras and Cape Cormorin; and its name is derived of the word Sentamil, or Codundamil, the general names of the inhabitants of that portion of the country. It is sometimes confounded with the Malabaric, because Europeans include under the term Malabar, all the nations dwelling on each side of the Mysore. The language is written from the left to the right, and it is usually inscribed upon long narrow leaves of palm, of a light olive-brown colour, with a pointel or style, of about a foot in length. In some instances, the Tamoul, or Tamul tongue, greatly resembles the ancient Greek, and like that speech, its alphabet originally contained but sixteen letters; while in its modern state also, some of its characters are used as numerical figures. Like those of the Sanskrita and Bengalese, the Tamoul letters are divided into ten vowels without consonants, which are again equally parted into long and short vowels;---and into eighteen consonants, each of which includes a short A, the absence of which, whenever it is cut off, is indicated by a point or small circle placed over the letter. The Tamoulic vowels are metaphorically denominated Uyir, or Soul, and in form they are as follow:---

The Tamoulic Consonants are denominated Mey or Body, and sometimes Shetteruttu or Dead letter, and they are formed according to the following examples:



The term expressive of a syllable, in the Tamoulic tongue, is formed by an union of the words used for Vowels and Consonants, namely Uyirmey, Soul and Body. The Tamoulic Consonants admit of two kinds of divisions, first as to sound, secondly as to form. With respect to sound, they are arranged into three classes, agreeing with the arrangement of the Mutes in Greek; that is to say, 1. Those which are Aspere, or Rough, and which in the native speech are called Vallinam, from Vallu, Strong, and Inam, a Class or Tribe: 2. Mallinam, or those which are Leves

as before: 3. Idciyinam, those of the Mediæ, or intermediate tone: from Idei Middle. In conjunction with the strength of their sound, should also be considered the length of it; and for the regulation of this, there is in the Tamoulic a measure of time denominated Mattirei, which is said to occupy the space of the twinkling of an eye, or the snapping of a finger. Thus, like the increase of the notes in music, the pronunciation of a Consonant, requires but half a measure, that of a short Vowel a whole one, and that of a long Vowel, two measures. With respect to their formation, the Tamoulic Consonants may be parted into four divisions, all of which however, are partial in their extent. Firstly, certain Consonants to the number of nine, are properly considered as Initials, that is to say, such characters with which only words can originally commence: these are marked in the foregoing list with a small capital I. Secondly, there are eight finals or letters with which original words must conclude; and these are specified by a small capital F placed beneath them. Thirdly, there are three Medials, or characters which in original words must be placed in the centre; and these are pointed out by a small capital M. Fourthly, in passing through their connections with the ten vowels, the Consonants change their forms, in a manner similar to that which has already been shewn in the Sanskrita, &c. The Tamoulic types, for different portions of the Sacred Scriptures have frequently been printed in this tongue, are very small, and of an exceedingly beautiful form, having but little variation in their thickness, and more resembling the original native writing, than the characters above exhibited. The Telooguo or Telinga language, which is spoken in the Northern Circas, is a dialect of the Tamul; and the Carnarse and Malnyalim, have sometimes erroneously been considered in the same light; but some particulars of their difference may be seen in the supplement to No. xxxi. of the Periodical Accounts of the Baptist Missionary Society, Vol. VI. Bristol, 1817, 8vo. which contains "A Memoir relative to the translation of the Sacred Scriptures at Serampore, addressed to the Society, March 1816." The best works on the subject of the Tamul language are *Grammatica Damulica, quæ monstrat viam brevissimam qua lingua Damulica seu Malabaric facile disci possit, concinnata a B. Zeigenhatz. Halæ, Saxonum*, 1716, 4to: *Grammatica Latino-Tamulica, in qua de Vulgari Tamulicæ Linguæ Idiomate dicto fusius tractatur. Auctore P. C. J Beschio.*. Madraspatnam, 1813, 4to. *Rudiments of Tamul Grammar, combining with the rules of Kodun Tamul, an Introduction to Shen Tamul.* By Robert Anderson, Esq. London, 1821, 4to.

PERSIAN.

It has already been shewn upon page 296, that the modern Persian language was partly derived of the Arabic, and that its letters, with some variation, were communicated to the Turkish; but it may now be remarked, that even this tongue, may in some measure, claim a nearer connection with the Hebrew, since, from the descendants of Elam, the son of Shem, mentioned in Genesis, Chap. x. v. 12, the country of Persia was called Elam or Elamais. About 1900, years previous to the Birth of Christ, which was nearly corresponding with the time of Abraham, this was a powerful state; but its limits have been various, at different periods of its history. The name of Persis, or Persia, was first given to a large province, situate in the southern part of the present Kingdom, next the Persian Gulf, called Pars or Fars, which was originally derived from the Oriental Noun Pars or Parsh, a Leopard, whence also comes Parsi, a Persian. Of the most ancient language of Persia, every trace is supposed to have been lost; and no genuine accounts of any are extant, until the times of the Kings of Sassan, who flourished from the commencement of the third, till the middle of the seventh century. In the year 351, a dialect of the old Persian tongue, greatly refined in the Academy of Gandispor, in Khorassan, was spoken at the Court of Beharam Gur, whence it was denominated Deri, or Courtly, to distinguish it from the older Pehlevi idiom, or language of the country. Besides these two dialects of the more ancient Persian tongue, there were several others which were also peculiar to different Provinces. Thus, the *Deri* was spoken at Court, in Modain on the Tigris, and in the Provinces of Khorassan, and Balk. The *Pehlevi*, which Sir William Jones considered as having arisen from a Chaldean original, derived its name from Pehla, a tract of land comprehending the five capital Cities where it was used; namely, Isaphan, Rei, Hamadan, Nehavend, and Aderbigiane. The *Sogdi*, was the language of the Province of Sogdiane, in the centre of which is Samarcand. The *Zabuli*, was so called from the Province of Zabiestan, the limits of Hindostan, which comprised the Cities of Gazna, Bamian, Melmend, Firouzcouch, Caboul, &c. The *Heravi* was the common speech at Herah, in Khorassan. The *Khouzi*, which was a species of the Deri tongue, was peculiar to the Court at Khouzistan, in the Province of Fars, and at Bassora. There were also the *Tartarian* and *Souriani*, or *Syrian* dialects; and the *Carchouni*, a language compounded of Persian and Syrian, which was used in letters missives. A very ancient and abstruse dialect of the Sanskrita, was also used by the Persian Priests and Philosophers, which was entitled the language of the *Zend*, and

a sacred volume on Moral and Religious subjects, which was written in it, was known under that name; but properly speaking, only the letters of the work should be called Zend, and the tongue itself *Avesta*. An instance of a similar kind may be found in the Vedas, or sacred books of the Hindoos, which are written in the Sanskrita language, and the Deva Nagari character. The Zend, however, considered as the ancient and sacred tongue of Persia, as well as the Pehlevi, are now nearly extinct; while the Parsi, of which some pure instances remain, has been so much altered by its connection with the Arabic, the history of which we shall presently trace, that it has become almost a new language. Sir William Jones regarded the Parsi as the great source of all the dialects of Persia, the Sanskrita, and even of the Greek, Latin and Gothic tongues. He found that many Parsi nouns were almost pure Sanskrita, and that an equal number of Persian imperatives formed the roots of Sanskrita verbs. From this he deduced, that the Parsi tongue, like many of the Indian dialects, arose out of the language of the Brachmans; and that the pure Persian is without any trace of the Arabian. In confirmation of this it may be observed, that one of the most ancient Persian alphabets now extant, greatly resembles the rude form of the older Bengalese; but in the reign of King Jezdegerd I. about the sixth century, the Arabic letters were first adopted by the Persians.

About the close of the sixth century, Anushirvan, surnamed the Just, commanded his chief Physician Barzuich to go into India, to procure a copy of certain moral Fables, then in the possession of the Indian Monarchs, translated into the Pehlevi, or common dialect. He went, studied the Sanskrita, and returned with the work, the celebrated Fables of Pilpay, which about an hundred and forty years subsequent, was again translated into Arabic, by order of Almansar, second Khalife of the house of Abbas. Barzuich's Pehlevi translation is not known to be extant, and therefore the language used in Persia in the second period of its literary history is likewise nearly extirminated. But the principal cause of the loss of the Deri and Pehlevi dialects, polished and elegant as they were by the patronage of Anushirvan, was the arbitrary establishment of the Mahometan faith. About the time of the first publication of the Koraun in Arabia, some Persian Romances were introduced into that country by a travelling merchant, and the inhabitants openly professed that they found them considerably more amusing than the moral lessons of Mahomet. To oppose this feeling, a portion of a chapter was immediately written, in which the merchant was condemned, and his tales treated as the most pernicious fables hateful to God and his Prophet; whilst the Khalife Omar,

acting upon the same principle, commanded all foreign books to be destroyed, burned the second Alexandrian library, and the records of the Persian Empire, in A. D. 640. One book, however, as it is related in a life of the poet Ferdusi, was preserved from this indiscriminate destruction by Sand, one of Omar's Generals; who found it after the victory of Cadessia. It consisted of a History of Persia compiled from the Sassanian annals, and was written in the Pehlevian dialect, from which it was ultimately translated into some of the other Asiatic languages. Under the Khalifes of the house of Abbas, the Persian tongue was but little encouraged, though the literature of the Arabians met with considerable support; but when the power of those Princes began to decline, and a number of independant chiefs sprang up in the Empire, Poets and Literary men were greatly patronised, and about the tenth century a new dialect of the Persian tongue was introduced, blended with words from the Koraun, and expressions from the Arabian Poets, who then began to be imitated in Persia. The elegance of the tongue was afterwards greatly increased by the magnificent poetical writers which the country itself produced. Of these, Ferdusi, a native of Tus or Meshed, is the oldest, as he flourished in the close of the tenth, and commencement of the following century, at the Court of Mahmoud in the City of Gazna. His principal work was a very elegant Epic poem on the History of Persia, which occupied him thirty years, but for which his only reward was as many small pieces of money, as the work contained couplets. He wrote in retaliation an animated invective against the Sultan, and then leaving Gazna in the night, fled to Bagdad, where the Khalife protected him till he died, which was in the year 1020. Ahmed Ebn Soliman Aboul Ola, called Alami from his blindness, was an eminent Arabian poet who was born in 973, and was the instructor of several Persians who were peculiarly eminent for the purity of their compositions in their own tongue: and about the close of the tenth and commencement of the eleventh century, the Persian poems in general became enriched with Arabian phrases and verses amalgamated into their sentences. Aboul Ola died in 1057. Early in the twelfth century, Anveri, a native of Abiard in Khorassan, flourished at the court of the Sultan Sanjar; and in the year 1180, the famous Poet Sadi was born at Shiraz, in whose elegant works the Arabian and Persian were most happily combined. The fourteenth century produced Shemseddin, surnamed Hafiz, the Anacreon of Persia, also a native of Shiraz; and he experienced the patronage of Tamerlane, who like many other Tartarian Princes conquered Persia, but who still continued to encourage its language, its religion, its literature, and its Fine-arts, nor did any of their in-

vasions tend in the least to corrupt them. Mahomet II., Emperor of the Turks, was likewise a protector of the Persian poets; since Noureddin Jami, the author of the splendid loves of Joseph and Zelikha, flourished at his Court; whilst his contemporary Catebi was entertained at that of Mirza Ibrahim, one of the descendants of Tamerlane. Under the family of Sefi, in the sixteenth and seventeenth centuries, the Persian language began to lose its ancient purity; and even to partake of the Turkish, which was then commonly spoken at the Court; and annexed is a summary view of the modern dialect, to which the preceding history, abstracted from the admirable works of Sir William Jones, (Vide Edit. Lond. 1799, 4to. Vol. II. pp. 303-328,) has at length conducted us.

The Persian language is written from the right-hand to the left, and the following are the thirty-two characters of their alphabet, which, as it has been already stated, were derived from the Arabian, with the addition of five others.

The words in the last column contain the proper sound of each character, particularly pointed out by having the corresponding letters printed in Italic.

Modern Persian Alphabet.

Name.	IV. Finals. III		II. In Med. I		Power.	Sound.
	Conn.	Uncon.	Con.	Unc.		
Alif.....	ا	ا	—	—	A.	Hall.....
Be.....	ب	ب	ـبـ	ـب	B.	Bar.....
Pe.....	پ	پ	ـپـ	ـپ	P.	Peer.....
Te.....	ت	ت	ـتـ	ـت	T.	Too.....
Se.....	ث	ث	ـثـ	ـث	S.	Thou.....
Jeem.....	ج	ج	ـجـ	ـج	J.	Gem.....
Che or Chim.	چ	چ	ـچـ	ـچ	Ch.	Chain.....
He.....	ح	ح	ـحـ	ـح	Hh.	Strong Aspirate
Khe.....	خ	خ	ـخـ	ـخ	Kh.	Ditto.....
Dawl.....	د	د	—	—	D.	Deer.....

Modern Persian Alphabet continued.

Name.	VI. Finals.	III. Initial		Power.	Sound
	Conn.	Uncon.	Con.	Unc		
Zawl.....	ذ	ذ	—	—	Z.	Zenith.....
Re.....	ر	ر	—	—	R.	Rest.....
Ze.....	ز	ز	—	—	Z.	Zone.....
Zhe, or Zje.	ژ	ژ	—	—	J.	j French ....
Seen	س	س	سـ	سـ	S.	Send.....
Sheen.	ش	ش	شـ	شـ	Sh.	Show .....
Sawd, or Swad.	ص	ص	صـ	صـ	S.	Says.....
Zawd or Zwad.	ض	ض	ضـ	ضـ	Z.	Graze.....
To.	ط	ط	—	—	T.	Caught.....
Zo.....	ظ	ظ	—	—	Z.	Bazaar.....
Ain.....	ع	ع	ـعـ	ـع	A. gut tural.	Anoint.....
Ghain.	غ	غ	ـغـ	ـغ	Gh.	Ghost. .....
Fe.	ف	ف	ـفـ	ـف	F.	Fall.....
Kaaf.....	ق	ق	ـقـ	ـق	G. gut tural.	.....
Kawf.....	ک	ک	ـکـ	ـک	K.	Kind.....
Gawf.....	گ	گ	ـگـ	ـگ	G. gut tural.	Glass.....
Lawm.	ل	ل	ـلـ	ـل	L.	Land.....
Meem.....	م	م	ـمـ	ـم	M.	Moon.....
Noon.....	ن	ن	ـنـ	ـن	N.	Now.....

Modern Persian Alphabet continued.

Name.	IV. Finals. III. Conn.	Uncon.	II. In Med. I. Con.	Unc.	Power.	Sound.
Waw, ...	و	و	—	—	W, or U.	*Warn*.....
He.....	ه	ه	ﻫ	ﻫ	H.	*Heat*, slight Aspir.
Ye.	ي	ي	ﻳ	ﻳ	I or Y.	*Year*.....
Lawm-Alif..	لا	لا	—	لا	La.	.....

The Initials and Medials which are not inserted are the same as the Finals. The second and fourth of the above columns, counting from the right-hand, are used only when the letters are connected with a preceding one; and every letter also should be joined to that which follows it, excepting Alif, Dawl, Zawl, Re, Ze, Zje, and Waw. Eight of the above letters, namely Se, Jeem, Sawd, Zawd, To, Zo, Ghain, and Kaaf, were adopted from the Arabic, and are not to be found in any words that are not purely Persian; but on the other hand Pe, Che, Zje, and Kawf, are peculiar to the Persian alphabet, and from these are formed their short vowel points. The alphabet itself is divided by native grammarians into three parts; namely, *Musoory*, which contains fifteen of those characters that are formed but of two letters in the Persian spelling: *Mulfoozy*, containing fourteen letters of three characters each: and thirdly, *Muktooby*, in which the Initials and Finals are the same, and of which there are only three letters. Alif, Waw, and Ya, are the long vowels: but the short ones according to the custom of the Hebrews and several of the other more ancient nations, are omitted in writing as sn, for sun, &c. To supply the proper powers, the Persians sometimes use small points placed above or below the letters according to the sound required; but these, as well as their orthographical marks, are very rarely written in their books. The following instances will give an idea of the nature of these characters.

ـَ Is an inclined line placed above the letter, which is denominated *Futtah*, or *Zubber*; it possesses the power of a, or ai.

ـِ Is an inclined line placed at the foot of the letter, it is called *Kessr* or *Zeer*, and supplies the place of i, and sometimes of e.

ـُ *Fum* or *Peish*, is inserted for o, oo, or u.

ـْ When placed over a consonant shows that the syllable ends with it.

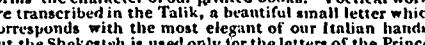
ـّـ *Medda*, when placed over Alif, gives to it a long and broad sound; but *Mad* over the same letter, thus آ, causes it to be pronounced as a short a, and sometimes like an i or u.

ء *Humza* is a mark placed at the end of a word, and when the sign of the short i has been expressed or understood in the course of that word, it stands for the letters ye, in words which end in he. It also represents the article as in *Namahi*, a book; the former of two substantives as in *Nafahi Mushk*, a bag of Musk; and the second person singular in the preterites of compound verbs, as in *Dadahi*, thou hast given.

ّ The mark Tashdid, is also written above the word, and shews a consonant to be doubled, as *Turruh*, a lock of hair.

The Persians use a variety of different hands for their writing, but those which are the most common, are the Nisikhi; the Talik, or Hanging; and the Shekesteh, or Broken. In the first are all Arabic manuscripts together with most Persian and Turkish histories, written, and it likewise forms the character of our printed books. Poetical works are transcribed in the Talik, a beautiful small letter which corresponds with the most elegant of our Italian hands; but the Shekesteh is used only for the letters of the Princes of the country, and by the Indians in rapid writing, as its characters are imperfectly and rudely shaped.

The Persians do not use their alphabetical characters as Numerals, but the following figures have been invented for that purpose.



Eek	Doo	Seh	Chicar	Punje	Shish	Hift	Hisht	Nuh
1	2	3	4	5	6	7	8	9

Ten is formed of the following character, ۱۰ with *Eek*, and is called *Deh*; Eleven is made of two *Eeks*, and called *Eeaz-dek*; Twelve of *Eek*, with *Doo*, and called *Dooaz-dek*, &c. There are no other characters used in the Persian numerals, for twenty is made of the short mark used for ten with that two placed after it; and twenty is written one two. A hundred is compounded of the one, and two short marks or cyphers; and ten thousand is written one and four cyphers, similar to the English. As the Persian letters vary their forms according to their places in the word, so likewise they vary according to those characters with which they are combined, as may be seen in the following specimen:

Persian Combinations.

ba	بابا	kha	خا	bd	بد	nh	نح	ph	په
ya	یایا	ja	جا	yd	ید	nkh	نخ	nh	نه
pa	پاپا	cha	چا	pd	پد	nj	نج	th	ته
na	نانا	aa	عا	nz	نز	nch	نچ	sh	شه
ta	تاتا	ga	غا	bz	بز	th	تح	mm	مم
sa	ثاثا	fa	فا	yz	یز	tkh	تخ	hm	همم
sma	قا	ka	قا	pz	پز	tj	تج	sm	سم
tma	قا	ka	کا	kl	کل	tch	تچ	hm	حم
nma	قا	la	لالا	klu	کلا	nh	نح	ym	یم
ma	ماما	md	مد	bn	بن	th	تح	ml	مل
ha	ها	mz	مز	yn	ین	bh	به		
ha	ها	nd	ند	nn	نن	yh	یه		

It is stated by Theodoret and St. Chrysostom, that the Scriptures were very anciently translated into the Persic tongue; although there be neither any account of the conversion of the whole Persian nation to Christianity, nor are there any fragments of this original version extant. About the eleventh or twelfth century, a Jew made a faithful

translation of the Hebrew Pentateuch, for the benefit of the Jews in Persia, which was afterwards printed in the fourth volume of Bishop Walton's Polyglott Bible; and he also mentions two Persic versions of the Psalms, yet in manuscript, one of which was executed by a Portuguese Monk in the year 1618, and the other by some Jesuits from the Vulgate Latin. Brian Walton likewise published an ancient and valuable Persian translation of the four gospels, from a manuscript dated A. D. 1314, in the possession of Dr. Pococke, which was made from the Syriac, and in which Syriac words were sometimes retained, having a Persian translation. Another version, supposed to have been made from the Greek, was published in 1652-57. All these however, having become obsolete, Lieut. Col. Colebrooke completed and published the four Gospels at Calcutta, in 1804; and the Rev. H. Martyn produced an entire and elegant version of the New Testament at Shiraz, in 1811.

Some of the best works illustrative of the history of the Persian language and the modern structure of the tongue, are the following---*Introductory Grammatical Remarks on the Persian Language*, By George Hadley, Esq. Bath, 1776. Quarto. *A Vocabulary of Persian, Arabic, and English*, By William Kirkpatrick, London, 1785, Quarto. *The Persian Interpreter, By the* Rev. Edward Moises, M. A. Newcastle, 1792, Quarto. *Dissertations on the Rhetoric, Prosody, and Rhyme, of the Persians.* By Francis Gladwin, Esq. Calcutta and London, 1801, Quarto. *The Persian Moonshee*, By the same, Calcutta and London, 1801, Quarto. *A new Theory and Prospectus of Persian Verbs*, By James Gilchrist, Calcutta, 1801, Quarto. *A Grammar of the Persian Language*, By Sir William Jones, London, 1804, Quarto; of which a new edition is in the press, and *Richardson's Persian, Arabic, and English Dictionary*, Edited by Dr. Charles Wilkins, London, 1806, Quarto, 2 Vols. A more extended list may be seen in the Catalogue of Books on Oriental Literature, published by Messrs. Kingsbury, Parbury, and Allen.

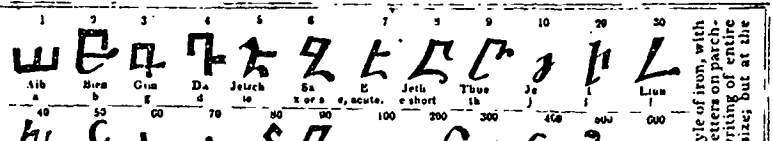
ARMENIAN.

The tract of land which is denominated Armenia, is situate in the North Western part of Asia on the borders of the Black Sea; and it is supposed to have originally received its name, either from Armenus, one of the companions of Jason in the Argonautic expedition, who afterwards settled in this country, or else from Aram the son of Shem, or perhaps a King of Armenia bearing the same name. Bochart derives the name from the Hebrew Har, a Mountain, and Mini a province in the country, mentioned by the

Prophet Jeremiah in chap. li. v. 27. "Set ye up a standard in the land, blow the trumpet among the nations, prepare the nations against her, call together against her the kingdoms of Ararat, Minni, and Ashchenaz; appoint a captain against her; cause the horses to come up as the rough caterpillers:" and again by Amos, chap. iv. v. 3. which in the Chaldaic version reads, "*and they shall* break open upon your walls, and lead you forth together, every one *at the place which* is before him, and carry you beyond the mountains of Armenia, saith the LORD." Vide Biblia Sacri Polyglotta, à Briani Waltoni. Vol. III. From these it is ascertained, that the place spoken of by them stood between the mountains Ararat and Ashchenaz; and that Har-mini signifies the mountainous part of Mini, Menni, Mynias, or Mylias, a name given at first to one Province only, but afterwards becoming common to the whole country of Armenia. Bryant in distinguishing betwixt Armenia and Aramen, the land of Aram, which is parted from it by Mount Taurus, supposed that the Harmunah, or Mountain of the Moon, mentioned by Amos, gave the country the name of Armen or Harmen, the mountain where the Ark rested. Others however have imagined, that its name is more truly derived from Har, a mountain, and Menni which is formed from a Hebrew word signifying metals, because the country abounded with mines. The original inhabitants of Armenia are sometimes supposed to have been Phrygians, a neighbouring nation, as several words of their language are to be found in the Armenian; and a colony of Ascanians, which came from Phrygia, made an early settlement in Armenia. Some authors have conceived, that Noah resided several years in Armenia, upon leaving the Ark on the top of Mount Ararat in that country; and that on his departure thence he left several of his descendants residing there, whence Hul, or Chul the son of Aram, and Mesech the son of Japhet, have alike been called the progenitors of the ancient Armenians. The hypothesis however that is most commonly received, is that they were originally Syrians, or at least were a tribe of the same nation; and from these circumstances it can hardly be doubted, that their most ancient language was a dialect of the Hebrew, Syro-Hebraic, or Syrian, the characters of which they certainly once used, and between which latter and their present tongue there are still *some* points of resemblance; but as in process of time both Phrygians, Greeks, and Persians settled in Armenia, the speech became confused and altered into a mixed phraseology. The invention of their present characters is attributed to several different persons. The Armenians themselves believe that Haik, who according to their statements lived before the

destruction of Babel, was the founder of the kingdom of Armenia, and the first who used the Haikian language; the purity of which they state to have been corrupted by its mixture with that of the Genthunians a people of Canaan, the Bagaratides, and the Amatuniens, Jewish tribes, the Medes, and many others. Until the third century the Armenians are said to have used indifferently the letters of the Greeks, the Arabians, and the Persians; but at that period, one Miesrob, Prime Minister and Secretary of the Kings Warazdate and Arsace IV., invented for them the alphabet which they still retain. Some time after the Haikian language ceased to be commonly spoken, when the kingdom of Armenia became the prey of the Hungarians, the Saracens, the Egyptian Khalifes, and the Tatars under Tamerlane. The literal language, as the Haikian is now called, is to be found only in their sacred manuscripts; a knowledge of it is considered a great literary accomplishment, and is all that is required of the Vertabiets, or Armenian Doctors, whose province is to preach and instruct the people. Angelus Roccha, George the Patriarch of Alexandria, Sixtus Senensis, and others, are however in favour of the claim of St. Chrysostom to the invention of the Armenian letters. It is certain that when he was banished from Constantinople by the Emperor, he finished his days at Comanis in Armenia, in A.D. 407; and there is still extant an alphabet which is known by his name. The truth however seems to be, that upon the decline of the Syriac tongue in Armenia, the historical records of the country were written in the Greek language, to which succeeded the Persian, with the old sacred dialect, with which, Sir William Jones imagined the Armenian was originally a twin speech, descending from the same Indian source; and in conformity with this hypothesis we have caused it to succeed our account of the Persian. Towards the close of the fourth, or commencement of the following century, Miesrob, whom we have already mentioned, conceived the idea of inventing a series of letters which should express the sounds of the Armenian tongue. This, after many vain attempts and fruitless journies to procure the assistance of the learned, was revealed to him in a dream; and although some part of this tradition may be questioned, yet it is commonly believed that if the Armenians did not derive their letters from the Persian Pehlevi, yet that they were invented by some of the most learned of their own country about the fifth century.

The Armenians write and read from the left to the right, and there are thirty-eight letters contained in their Alphabet, the smaller forms of which, used for their fine printing, are shewn in the following specimen :—


1 2 3 4 5 6 7 8 9 10 20 30
Aib Ben Gim Da Jetsch E Jeth Thue Je Liun
a b g d e x or s e, acute. e short th j l
40 50 60 70 80 90 100 200 300 400 500 600
Chhe Dzu Kien Hae Dza Ghat Tse Alien Hi Nue Sche Tso
eh dz k h dz gh tsh n i & h n sh oue
700 800 900 1000 2000 3000 4000 5000 6000 7000 8000 9000
Tscha Po Dsche Rra So Wiew Tiun Re Tsuo Hiun Pjur Khe Fo
tsch p dsch rr s w t r ts wo p kh, f, or ph

The figures which are placed over the above characters, indicate the power they possess as numerals.

To these is added a long O, shaped similarly to the English capital. The Armenian characters are divided into two classes, and are written in four different hands. The first class contains the large letters, which are of two kinds; and of these the first is called in Armenian, *Zakghachir*, or flowery, as it consists of pictorial or blooming capitals, wherein the shape of the letter is elegantly formed of small and delicately drawn human figures, animals, flowers, ornaments, planets, &c. which are used for the titles of books, and the two-line initials of chapters. These letters at the present time are called *Chelhachir*, or capital letters, and *Chassanachir*, or letters of animals. The second species of the larger characters is called *Erghathachir*, or iron writing, which Rivola supposed was because they were formed with such powerful lines as to resist the injuries of time; but which Schröder explains to allude to the style of iron, with which the Armenians anciently writ their letters on parchment. They were formerly used for the writing of entire volumes, when they were of a very large size; but at the

present time they are confined to ornament the titles and frontispieces of books, and the heads and initials of chapters as they answer chiefly to the English two-line upper-case letters. They are of a strong but not inelegant form, and are always broken at those parts which should be connected by hair-lines. The French have given to them the name of Lapidaire or Stony, because they are used for public inscriptions. The second principal class of the Armenian writing consists of the *Poloverchir*, or small round, the use of which is confined to their less and more deliate manuscripts, and to the ordinary matter of printed books. The fourth species of characters is denominated *Notrchir*, Cursive, or running-hand, of which there are both large and small letters, and which are appropriated to Commerce and epistolary correspondence. The Armenian language is used in Great and Little Armenia, Asia Minor, Syria, Persia, and Tartary.

The Armenians are also indebted to Miesrob, the author of their characters, for a translation of the Scriptures into their own vernacular tongue, which he executed towards the close of the fourth or early in the fifth century, from the Alexandrian Septuagint. Usean, an Armenian Bishop, who went to Amsterdam to superintend the edition of the Bible, printed there in 1666, altered the old translation, which is sometimes attributed to St. Chrysostom, from the Peschito, or old Syriac version. The translation of the New Testament, which proceeded likewise from Miesrob, or the Patriarch Isaac, about the time above mentioned, was made twice from the Syriac, and then from the Greek; but Haitho, or Hethrom, King of the Lesser Armenia from A.D. 1224-1270, being well skilled in the Latin, and attached to the Romish Church, altered it in several instances to make it accord with the Vulgate translation. Some of the best works on the subject of the Armenian Language, are Francis Rivola's *Dictionarium Armeno-Latinum*. Milan, 1621-1633. Folio; *Grammatica Armena*; by the same, Milan, 1624. Quarto; and John Joachim Schröder's *Thesaurus Linguæ Armenicæ, Antiquæ et Hvaiernæ*. Amsterdam, 1711. Quarto.

TURKISH.

This language is very far inferior either to the Arabic or the Persian; of both of which it is compounded, together with several other dialects. The characters used in writing it are the Arabian, with the five additional ones of the Persian; and the pronunciation of the tongue is somewhat between those of the two nations, excepting about the City of Constantinople, where it is spoken with almost as much softness as the Persian itself. The Turks have seven spe-

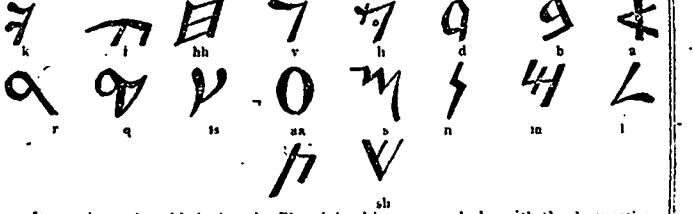
cies of writing; namely the *Nesqhi*, which is used for transcribing the Koraun, and the greater part of their books of history: the *Diwani*, which is devoted to state papers and law instruments; in which the lines commonly run diagonally from the lower right-hand to the upper left: the *Talik*, which we have already noticed in our account of the Persian: the *Kirma*, which somewhat resembles the last, and which is used chiefly for registers: the *Sulus*, or *Schulsi*, which is appropriated to the titles of books and the Imperial Letters Patents: and the *Iakouti* and the *Rejhani* which were so called after the names of their authors. The first printing in Turkey, excepting the Hebrew books of the Jews, commenced about the year 1730, under the superintendance of Ibrahim Effendi, at Constantinople. He has produced a history of the Othman Empire, in his own language, and a French Grammar of the Turkish tongue.

PHŒNICIAN.

THE language of the Phœnicians stands, with respect to most of the modern tongues, in nearly the same degree of relationship as the Hebrew does with respect to the ancient. It was certainly, as we have hereafter considered, one of the immediate progenitors of the Greek; whence descended the Latin, and from which several of the Continental dialects were formed: but it is also to be traced in so many other tongues, that its influence on the speech of mankind, so far as the earth was anciently known, seems to have been like the intercourse of the Phœnician people, almost universal.

The inhabitants of Phœnice are supposed to have been acquainted with the use of letters at as early a period as any nation in the world; and some have not hesitated to attribute to them their invention. Together with the inhabitants of Egypt, they were descended from the impious race of Ham; and their country was situate on the North-west shores of Canaan, upon the borders of the Great, or Red Sea. Much of their Theological history, like that of the Egyptians, was derived from the hieroglyphical records which Hermes, or Taaut, also the father of Egyptian learning, had engraven upon pillars of stone, and although their first language was doubtless a dialect of the ancient Hebrew, and their original letters very much resembled the older Samaritan characters, yet in the year of the Flood 531, when Noah's descendants were scattered abroad, Taaut, or Thoth, the son of Misor, called the First Hermes, invented letters in the Phœnician settlement. About the year of the World 2629, Taaut is supposed to have travelled into Egypt with King Cronus, and to have taught in that nation

the use of his sacred symbols and characters. For fifteen generations, about 400 years, his posterity ruled at Thebes; but at that period, the Prime Minister of King Menes, who is also called Thoth, or the Second Hermes, greatly improved both the arts and the literature of the Egyptians, as we have already stated on page 819, ante. There are not any Phœnician writings now extant, but several of their alphabets are yet preserved, which furnish forth the ancient shape and powers of their letters. The following specimen of them was taken by the Abbé Barthelemy, from Maltese inscriptions, and from Syrian Medals.



It remains to be added, that the Phœnician history concludes with the destruction of Tyre by Alexander in the year of the Flood 2016, or 332 years previous to the birth of Christ. The nation of Phœnice is said by some to have received its name from Phœnix, the son of Agenor, one of its Kings, and by others from the great number of palm trees, called in Greek Phoinikes, which grew within it. The Phœnician letters are sometimes called the Pelasgian, a name given by the ancient Greeks to the people themselves, signifying Wanderers, derived from Pelagus the Sea.

COPTIC.

Before we enter upon the history of the Greek letters, it will be proper to consider that of their contemporary and cognate tongue, the Coptic; inasmuch as from

the circumstance of their having been used in Egypt, the account of them will naturally conclude our detail of the rise and progress of literature in that nation. De la Valle erroneously supposes, that the Coptic characters were the enchorial, or the common ones of the country; and Kircher imagines, that they were some of those which were invented by the First Hermes, having their forms designed from the Ibis, the serpent, the bull, the hawk, the ram, and other sacred animals. Bedford, in his animadversions on Sir Isaac Newton's Chronology, conceives that the Coptic letters were the original of the Greek, and that the Samaritan were the ancient Egyptian; but perhaps the truth is, that a part of the alphabet is formed of the Grecian, whilst the additional seven letters used by the Copts, were taken from the original characters of Egypt. It is scarcely improbable that the Egyptians, when in later times they had nearly lost the remembrance of their ancient letters and learning, might make use of the Greek alphabet, the introduction of which they had forgotten, and adding to it what remained of their own letters, imagine that they had recovered the ancient ones which were used by their ancestors. The City of Coptos, Coptis, or Coptus, now called Kypt or Kepht, whence the Cophtites derived their name, stood in Upper Egypt, three miles distant from the Nile. The word, in the ancient Egyptian language, signifies Want or Privation; because according to Plutarch, it was given to commemorate the grief of Isis, when she cut off one of her locks on being informed of the death of Osiris. The City was inhabited both by Egyptians and Arabians; it was the centre of communication between Egypt and the Red Sea; and Pliny calls it the emporium of merchandise brought out of India and Arabia, which was conveyed by the Nile to Alexandria. The Christians were formerly *very numerous* in Coptos, and the Mahometans in derision, gave the name of Copt to all the Christians in Egypt; *but in the time* of the Emperor Diocletian, the tenth persecution commenced against them in A. D. 303, when many of the inhabitants of Coptos were put to death, and the remainder sent into exile. The fragments of this once famous City still evince its *former* extent; they occupy a space of about two miles in circumference, and consist of columns of grey granite stones engraved with hieroglyphics, and a portion of a bridge over a canal, yet navigable, by which water was anciently conveyed from the Nile to a basin within the City. The Coptic tongue, at the present day, is almost wholly confined to the books of the Egyptian Christians; and it consists of a mixture of Greek, Persian, Latin, and Arabic words, which have been added to it during the government of each of those nations, to supply the deficiency of some part of it which has been lost; but the *present* Copts, *or* native Egyp-

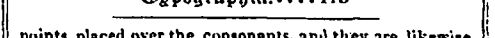
tians, speak Arabic, the ancient tongue being unknown to the common people, and is scarcely understood even by their priests. There are thirty-two letters in the Coptic alphabet, which are formed according to the following examples---

Modern Coptic Alphabet.

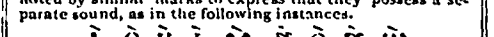
Figure.	Name.	Power.	Figure.	Name.	Power.
	Alpha.	A.		Bi	P.
	Vida	B. V.		Ro	R.
	Gamma	G.		Sima	S.
	Dalda	D.		Dau	T.
	Ei	E.		He orHu	Y. U.
	So	S.		Phi	Ph.
	Zida	Z.		Chi	Ch. Gr.
	Hida	I. Æ.		Au	O long.
	Thita	Th.		Schei	Sh.
	Jauda	J.		Phei	F.
	Kabba	K.		Chei	Kch.
	Lauda	L.		Hori	H.
	Mi	M.		Ganga	g, soft j.
	Ni	N.		Skima	Sh.
	Exi	X.		Dei	D.
	O short.	O		Ebsi	Bs.

The Coptic is written and read from the left hand to the right, and in its construction as a language, it is widely different from all others. The nouns are indeclinable, and the verbs are never conjugated; but particles, sometimes formed of syllables, and at others of a single letter, are prefixed to them to denote the case, gender, number, and person. Some of the vowels are indicated by lines and

points placed over the consonants, and they are likewise noted by similar marks to express that they possess a separate sound, as in the following instances.



There are also some characters used in the Coptic language, which like the Greek contractions stand for whole words or syllables, such as the following.



Like the other ancient nations, the inhabitants of Egypt used their letters for numerals; and such of that country as wrote in the Coptic language, placed a line over each character whenever they employed it as a figure, according to the following scheme, which has been taken from Athanasius Kircher's *Prodromus Ægyptiacus*. Rome, 1636. Quarto. Cap. II. De Numeris Coptitarum, p. 326.

Mona.	1	Phente.	5	Okthe.	8
Dio.	2	Ex.	6	Enia.	9
Tria.	3	Epthdi.	7	Deki.	10
Theissara.	4				

Enteko or Eleven, is formed by placing the small *Iaudu* by the side of a capital *Alpha*, with a stroke over both; then *Iauda* with *Vida* for Dodeko or twelve, and so on to

Ikosi. 20

Twenty-one or Ikosi Mona, is made of *Iauda* placed after *Kabba*, then *Vida* after *Kabba* for twenty-two, thus continuing till

Driante.	30	Okdeinte.	80	Diarokose.	300
Serante.	40	Eneninte.	90	Therason.	400
Pentinte.	50	Ekaton.	100	Pentekese.	500
Exinte.	60	Diakose.	200	Exakose.	600
Entaminte.	70			Ebtokose.	700

One thousand, Sheo, has a character peculiar to itself; but 2000 begins again with *Vida* with a double line above it, standing for Seau Esheo, or two and one thousand. There

are two dialects in this language; the Coptic, properly so called, which was spoken in Lower Egypt, and the Saïadic, which was the speech of the upper parts of the same country. The Old and New Testaments are extant in both these dialects, and Dr. Woide imagined from their peculiarities, that they had been made from the Greek Septuagint. The proximity of Egypt to Judea, caused the inhabitants of the former country to be acquainted with the Gospel at a very early period.

Some of the best works on the subject of the Coptic language are the following.--- *Lingva Ægyptiaca*, by Athanasius Kircher. Romæ, 1644, Quarto. *Lexicon Ægyptiaco-Latinum*, by Christian Scholtz, Edit. by Dr. C. G. Woide, Oxford, 1785, Quarto. *Grammatica Ægyptiaca*, by Christian Scholtz, Edited by C. G. Woide, Oxford, 1788, Quarto.

GREEK.

ALTHOUGH it be generally admitted that Cadmus, the son of Agenor King of Phœnice, was the great founder of the Greek language, yet it cannot with reason be supposed that the Grecians were ignorant of letters until he introduced them. Their original language was that of the sons of Japhet, who first inhabited Greece—soon after the Dispersion of Noah's descendants (2247 years before the Birth of Christ,) from Thracia, which was situate in the North Western-part of Greece next the Black sea, down to the peninsula of Peloponnesus, in the South, next the Mediterranean, now called the Morea. It is related by Tacitus, that when Cecrops led his colony from Sais in Egypt to Attica, about 1556 years previous to the Christian Era, he took with him the first Greek letters; and hence came the fable that he was half man and half serpent, because he understood both the Greek and Egyptian languages. But although there be not any proof for this hypothesis, it cannot be imagined that Cecrops was uninformed with respect to the characters of Egypt; and if he found the original inhabitants of that country where he planted his colony, destitute of literature, there can be but little doubt that he would have instructed them in that, as well as in the ceremonies of Religion, and rules of Civil Government. The settlement of Cecrops took place about fifty years previous to the arrival of Cadmus in Attica; but Inachus, also said to have been an Egyptian, had in the year 1856, before Christ, founded the Kingdom of Argos in the Southern parts of Greece, which lay to the West of the Cecropian territory; and he doubtless had also carried his native characters with him, but there is not any evidence stating that he taught them to the inhabitants of Peloponnesus, inasmuch as it may be inferred that he found them already provided with

characters very nearly resembling his own. This might readily be, since the Phœnician letters of Taaut, were discovered upwards of 850 years previous to the arrival of Cadmus in Greece; and, as the people of Phœnice were so continually migrating from one country to another that they were denominated Wanderers, those of their colonies which settled in Greece, gave to the other inhabitants the same letters that Taaut had carried into Egypt. Perhaps, however, in the long space of time which elapsed between the arrival of the Phœnician characters and those of Cadmus, they had become considerably altered, and he might so have rectified their order or pronunciation, as to give him some claim to the title of their inventor. This arrangement, too, accounts for the statement of Josephus, where he says, in his answer to Appion, that the Greeks had never been able to prove the antiquity of their letters; whence it has been asserted that they were not known even so late as at the Siege of Troy, which began 1193 years before the Birth of Christ. These particulars being stated, the history of the Greek letters seems to be reduced to the following program. They were most probably invented, as we have already stated, by Taaut, the son of Misraim, in Phœnicia, soon after the Dispersion of Noah's descendants; and they were then carried into Egypt, whence the knowledge of them spread by commercial intercourse or colonial settlements into Syria, Arabia, Chaldea, and Ethiopia. By the Pelasgi they were carried into Attica, the Ægean Sea, and Peloponnesus, where they founded the ancient kingdoms of Sicyon and Argos. The PELASGIAN alphabet was probably carried out of Phœnicia, before the inhabitants of that country had augmented the number of radical letters of which it was originally composed: it was written from the right hand to the left, according to the Phœnician custom, which was also followed by the ancient Etrurians and the Eolians. The Pelasgi had, however, too small a number of original letters distinctly to express the different sounds of their language, and for this cause they were obliged to attach several sounds to the same letter, but in the course of time they remedied this defect by the invention of other characters. But these changes were wrought by degrees, and several of the new letters must have been invented before the modern practice was introduced of writing from the left hand to the right, since certain of them are to be found on Pelasgian coins and inscriptions, which are written from the right hand to the left. This custom was continued by the Athenians, for near three centuries and a half after the building of Rome, (B.C. 753.); and the descendants of the ancient Pelasgi, and particularly the Samnites, continued to write so until about 240 years before the Birth of Christ. The Osci continued it

still later, but the Ionian G. eeks adopted the present mode of writing, so early as the third century after the erection of Rome. The letters themselves were sixteen in number, and to these was added the H, which although rejected by some, was without doubt an original Greek letter; they contained thirteen different sounds, and were of the following form, according to Dr. Swinton.

Ancient Pelasgian Alphabet.

Another Pelasgian alphabet has been formed from the most ancient inscriptions which are extant in this character, namely, from three tables which were found at Engubium, a City in Umbria, in the Appenines, in the year 1456. These furnish a series of twenty characters of the following forms and powers.

Father Gori has endeavoured to prove that the tables, whence these letters were taken, were written two centuries previous to the Trojan War: at the same time two other tablets were discovered, written in the Roman character.

Another branch of the Pelasgian nation, which migrated into Europe not many ages after the Dispersion, consisted of those Phœnicians who settled in Etruria, and to whom was given the name of the ETRUSCANS. The ancient Etruria was a country of Italy, a part of which is now known by the appellation of Tuscany, although the original province was far more extensive. It was separated from Liguria on the West, by the River Macra; from Latium and Umbria on the East, by the Tiber; its boundary to the North-east, was a part of the Appenines; and the South-western side was washed by the Mediterranean Sea, which was formerly called Mare Tuscum or Tyrrhenum, the Tyrrhenian Sea. The Etrurians or Etruscans, originally derived their name from Athuria or Aturia, the Chaldean word for Assyria, of which country Phœnice was a part: and as the permetuations of the letters A and E are continual in Oriental words, especially when they are written in Greek characters, Atura and Etura must be regarded as the same word, and as the ancient name of Etruria. The Etruscans were also called Raseni, Terseni, or Tyrrheni, from Rasen or Rasan, the name of the leader under whom they marched from Lydia to Italy, and who is sometimes named Tyrsenus. The title of Tusci or Thusci, is of a later date, and was given to the Etruscans by the Grecians, perhaps from the Greek word Thuske, Offerings received for the Gods, on account of their burning of frankincense in their sacrifices. It has been supposed that the Etruscans were, at one period, masters of all Italy, since the whole of that region which the Latins denominated Italia, was named Tyrrhenia by the more ancient Greeks; and Livy and Plutarch intimate, that the Tyrrhenian, Ionian, and Adriatic Seas, which partly surround Italy, were once known as the Etruscan Sea. The Etruscans were certainly some of the most ancient inhabitants of Italy, although that proof of their antiquity, which is adduced by Duret, will scarcely be believed; namely, that twelve cities or tribes were established in Etruria by Noah, and that they wrote in the same character as those used by their descendants. To this he adds, that these letters were entrusted to the Priests, who varied them according to their own pleasure as to their order, value, and import, writing them sometimes from the right-hand, and sometimes from the left. It will already be conceived that the Etruscan tongue was the same as the Phœnician; and their letters were almost the same in form as those of the earliest Greeks, being most commonly written from the right-hand to the

left. The following is an Etruscan Alphabet originally published in France, from undoubted Pelasgian monuments preserved in that country.

The ensuing Alphabet rests on the authority of Theseus Ambrosius, who states that it is still extant in many libraries in Italy. Like the foregoing, it is to be read from the left to the right.

The Etruscan language was spoken in the age of the Emperor Augustus, in whose time Christ was born, and it was also patronised by Claudius, who reigned about forty

years subsequently; but there are not any manuscripts in this tongue now extant, although the Etrurian records were preserved in the College of Augurs, until the middle of the fourth century of the Christian Era, when those Soothsayers initiated the Emperor Julian into their mysteries by means of them: probably this was done at the period when Julian reformed the Pagan worship. As Christianity was established in the reign of his successor, and the Pagan learning was offensive to the Christians, they have been charged with destroying the Etruscan records; from this period the ancient Pelasgian tongue was disused, and in a short time after it was not understood by the inhabitants of Italy. Although it remained obsolete for nearly thirteen centuries; yet, about forty years since, it again rose into notice, and it was cultivated with great success by several eminent men of Italy, France, Germany, and England; from whose labours it may be deduced, that the Pelasgian language and characters are preserved in the monuments which have been called Etruscan, and that every thing relating to the religious, civil, military, and naval establishments in the Roman nation, was derived from the Etruscans. Farther information on the history of the Etrurians, may be found in *The Universal History*, London, 1748, Octavo, Vol. xvi. pp. 1-130; and at page 51 of that work, is a *Catalogue of Modern Authors* who have written on the subject of the *Etruscan language*. Vide also Jackson's *Chronological Antiquities*, London, 1752, Quarto, Vol. iii. pp. 111-134. Astle *on the Radical Letters of the Pelasgians and their derivatives*, London, 1785, Quarto: and *The Origin and Progress of Writing*, by the same author, London, 1803, Quarto. pp. 51, ut supra, et 229-240. An account of the other dialects into which the Greek language was divided in the different Pelasgian colonies, will be found on page 275 ante, together with many other particulars concerning it.

Such then is the history of the most ancient Greek letters, which are commonly said to have been brought by Cadmus from Phœnicia into Bœotia, about 1493 years before the Birth of Christ. His alphabet consisted of sixteen letters only, that is to say, Alpha, Beta, Gamma, Delta, Epsilon, Iota, Kappa, Lambda, Mu, Nu, Omicron, Pi, Rho, Sigma, Tau, and Upsilon: but Palamedes of Eubœa, at the Siege of Troy, upwards of 250 years after, added the aspirates Theta, Phi, and Chi; and the double letter Zeta. Simonides, an eminent Poet of Cos, nearly 650 years subsequent, added the other double letters, Xi and Psi, the two long vowels Heta and Omega, and the character for the diphthong Omicron---Upsilon, but the long E is omitted in the later Greek alphabet, after the time of Simonides, though it was undoubtedly an original Greek

letter. The letters Zeta, Heta, Theta, Xi, Chi, Psi, and Omega, were unknown to Homer. The following is an ancient Greek Alphabet containing all these letters, which has been copied by Montfaucon, from the Coins of the Antiochi, Kings of Syria; three of which name, that is to say, Antiochus Soter, Antiochus Theos, and Antiochus the Great, reigned between the years 242 and 267 before Christ. They also appear on the coins of the Arsacide, and other Eastern monarchs, as well as on those of some Grecian states. The medals which bear this peculiar form of character, which appears to have a distant affinity with the starry letters already given at pages 200-201 ante, are called by the French Virtuosi, Medailles Perlées, from its resemblance to a string of pearls.

The ensuing alphabet is attributed to the Poet Virgil, who it is said, in his youth was deeply skilled in magic, and concerning whose wonderful actions, there is extant a curious old black letter romance, printed at Amsterdam by John Doesbruck, which "treateth of the lyfe of Virgilius, and of his deth, and many marvayles that he dyd in his lyfe-time by wityche-craft and nygromancye, through the helpe of the devyls of hell." This volume is supposed to have been a translation from the French, printed in Flanders, for sale in England. The characters following, in which it is said that Virgil wrote his magic books, are perhaps about as authentic as the romance now

quoted; for farther particulars concerning which, Vide Goujet Biblioth. Franc. ix. 225. Catal. de la Bibliotheque Nationale, II. 5. and De Bure, No. 3857.

It has already been stated, that the most ancient kind of Greek writing reads from the right-hand to the left; but the Ionians who first received the improved letters of Cadmus, varied this by writing one line from the left to the right, and the next in the opposite direction, in the manner of ploughing furrows, whence this species of inscriptions was called Boustrophedon, or turning and returning in the manner of an ox ploughing. The oldest specimen of the Boustrophedon which is extant, is the famous Sigean inscription, engraven upon a block of marble, and placed before the door of the church at Sigeum. It is supposed to have been engraven and erected about 560 years before the Birth of Christ, and not many years after the publishing of the laws of Solon, which were written in the same manner, but the tables containing them are lost. This mixed style of writing however, is thought to have been confined to public inscriptions, records, and works in prose; hexameter verses, the most ancient kind of poetry in Greece, being commonly written to the right-hand; but the Greeks also made use of a third species of writing, which they denominated Taepocon, and which ran in perpendicular columns, from the top to the bottom of the page, beginning at the right-hand. The corrupt word Taepocon, has been rendered more properly Toeporchon, from To onta ep'orchon, signifying that in the perpendicular way of writing, the *words* were arranged like trees planted in the etymology of which has been a considerable difficulty to many eminent scholars,

rows from the top to the bottom of grounds. The inscription which is upon the ancient Sandwich marble, is written somewhat in this manner; but the letters of each line stand exactly in order under each other, and every line has the same number of letters: this marble is written on both sides, and is supposed by Dr. Taylor, to have been engraven 374 years before the Birth of Christ. Besides engraving their characters upon stones, the Greeks used many other kinds of materials for preserving their writings and inscriptions; of which, as they were in some measure common to most other nations, we shall proceed to give a succinct account, premising that we are indebted for it to an excellent work, entitled "*Herculaniensia; or Archæological and Philological Dissertations*," By the Right Hon. William Drummond, and Robert Walpole, Esq." Loud. 1810. 4to. pp. 98, 107. Tablets of lead have been considered by some to be of extreme antiquity; and the passage in Job, xix. v. 23, 24. "Oh that my words were now written! oh that they were printed in a book! That they were graven with an iron pen and lead in the rock for ever!" has been thought to afford a proof of it, but this has arisen from the erroneous translation of the Vulgate, which renders the latter part of it, "Quis mihi ut exarentur in libro, Stylo ferreo, et plumbi lamina, vel celte sculpantur in silice;" that is to say, "that my *words* were written in a book. With an iron pen and plates of lead, or graven with a chisel in the rock." Now the true meaning of the passage is, that Job wished that his words were to be cut out of the rock, and those interstices to be filled up with thin plates of metal in the manner of Mosaic. Viewing the text in this light, King James's is evidently the best translation, and the Greek Septuagint, the Chaldean Paraphrase, and the Syrian and Arabic version, all concur in thus rendering the passage. Vide Biblia Polyglotta, à Briani Walton, Vol. III. pp. 40,41. Pausanius, a celebrated Historian who settled at Rome, A.D. 170, relates, that the works of Hesiod, who lived in the days of Homer, were written upon lead: and Pliny, although Vossius censures him for his expressions, states, that public documents were anciently written in leaden volumes. Æneas Poliorceticus, however, who flourished about 720 years before the Birth of Christ, relates, that the women conveyed secret intelligence by means of small leaden volumes, or rolls of very thin metal, which they wore as ear-rings. He adds further, that they were beaten with a hammer until they were so pliable, that they were sewed up between the soles of the shoes, and that even the messenger who carried them, was unconscious of the circumstance. Whilst he slept, they were taken out by the person to whom they were addressed, and others replaced without exciting suspicion. In the letter of instructions,

addressed by Humphrey Wanley, 26th April, 1720, to Andrew Hay, concerning his continental commissions for the Earl of Oxford's library, mention is made of a leaden book, given by Father Montfaucon to Cardinal Bouillon. Vide the Preface to the Catalogue of the Harleian Manuscripts. Some account of two Brazen books will be found in the *Archæologia*, Vol. xii. p 382, and the *Gents. Mag.* Vol. lxxii. pp. 993, 1109. Wooden tablets are stated by Calmet to have been used by the Jews from very remote antiquity, although he produces but uncertain evidence of such a practice. Eustathius asserts, that the custom of writing upon Wood existed in Greece even in very distant ages; and Pliny, citing Homer, states that the *Pugillares*, or small Writing-Tables which could be held in the hand, were known before the Siege of Troy. In Humphrey Wanley's letter already cited, several writings on wood are enumerated; as "the Egyptian Board or Table of Isis, adorned with Hieroglyphics;"... "some original Letters or Epistles, written by the hand of St. Hierome upon Phalira, or Bark;"... "four Instruments of the Emperor Theodosius, Junior, (now imperfect,) upon *Phalira*;" and numerous other manuscripts and instruments also upon Bark. The wooden tablets used by the Greeks were of various kinds: firstly, the *Achones* were square tables of wood, but the name is sometimes applied to those made of brass; and Aullus Gellius relates, that the Laws of Solon were written upon such in the Boustrophedon manner. The *Kurbeis* were triangular pieces of wood or stone, or rather pyramids of three sides, on which religious laws are supposed to have been written. Of this species also must have been the Greek *Delton*, a book perhaps so called on account of its resemblance to the letter Delta in its triangular form; but the Hebrew Deleth, which might have been its etymon, signifies a door, and probably the name alluded to, its having folding leaves like doors and gates. Euripides remarks, that the Delton was generally formed of the wood of the Pine-tree. The *Pinax* was a square board on which the Greeks were accustomed to write in the time of Homer, from whose expressions it would seem that it folded with two leaves; it was, however, never appropriated to works of any extent, but only to indexes and heads of chapters. The Hon. William Drummond imagines, that the name of this article might have been derived from the Chaldean word *Pinac*, to Educate, supposing it originally to have been a table for teaching children their letters. *Pinakion*, he adds, was the title for the wooden tablet on which the judges, or members of any public assembly, wrote their sentence or vote; and *Pinakes* signified a board on which wax was spread out for writing. *Sanis* was another name for a wooden tablet, perhaps derived from the Hebrew *Saniss*,

a branch of the Palm-tree, of which wood the Sanides were made. The Puxion was the name of a tablet formed from the wood of the box-tree, and this title may be traced to the Hebrew, since the Jews classed the box-tree with pines, calling them *Thasur*, viz. eminent, excellent, fortunate, which in the Phœnician tongue is written *Puk*, whence the translation to *Puxion*, is natural and easy. The last species of Greek wooden books was called *Abax*; it was square in shape, and is usually understood to signify a table on which Mathematicians drew their diagrams. Its etymon is probably the Hebrew *Ab*, a beam of wood. Tablets of Wax were a fourth material used for the writings of the Greeks and Romans; and they were prepared by spreading a layer of wax melted with resin, upon a board. Occasionally, however, they used a substance called Maltha, which signified mortar, plaster, or clay. Tablets of Brass of a cubical form, were also used for the writing of public documents; as Plutarch mentions the finding of a brass plate, with Egyptian characters, at Thebes in Bœotia; and Pollux states, that the Laws of Solon were inscribed upon Brass. Polybius mentions, that the Treaty made between the Romans and the Carthagenians, at the end of the first Punic War, B. C. 241, was engraven on brazen tables; but Dionysius remarks, that the Roman Laws were carved on Tablets of Oak, because they were not then accustomed to recording on Brass. The Libri Elephantini, or Elephantine books, have been imagined by some writers to have been composed of parchments made from the caul of the elephant; but in all probability they were formed of his ivory tusks, sawn into thin leaves, which Pliny mentions as a very ancient custom. Books of Skins and Parchment, as used by the Greeks, were of several different kinds; as the Diptherai, formed of the skins of goats and kids; the Derma, a general name for skins used for writing upon; and the Pergamenai, the name of certain parchments in the possession of the Kings of Pergamos. With respect to the period when these materials began to be used, there is no certain information; but Dionysius of Halicarnassus writes, that an ancient treaty between the Romans and the Gabini, was written on a wooden shield, which had previously been covered with the skin of an ox, that had been sacrificed when the parties concluded the terms of agreement.

Similar to the writing materials of the Greeks, appear to have been those used by the Jews; thus Stone was adopted for preserving the Decalogue, vide Exodus, xxxi. v. 18, xxxii. v. 15, 16, and a plate of Gold is directed to be engraven with the words "Holiness to the Lord," in Exodus xxxix. v. 30. In Numbers, xvii. v. 2. the names of the twelve tribes, are directed to be written upon twelve wands or rods, which

certainly had some connection with the writing upon wood of the Greeks; and a passage in Isaiah, hereafter quoted, has been thought by some to imply, that the Hebrews used the Papyrus; but Pliny states, that it was not employed until the time of Alexander: and even such writers as have controverted the point, admit that it was not common before that period. It has been supposed, that the Jews learned the art of preparing skins into parchment for writing, from the inhabitants of Pergamos, where it is said to have been invented 887 years before Christ. Rolls are mentioned by Isaiah, chap. xxxiv. v. 4.; by Jeremiah, chap. xxxvi. v. 2.; and by Ezra, chap. vi. v. 2. who wrote in the seventh, sixth, and fifth centuries before the Birth of our Saviour. Pens of iron are mentioned by Job, chap. xix. v. 24. and Jeremiah, chap. xvii. v. 1.; but perhaps reeds were also used, for in Judges, chap. v. v. 14. mention is made of some of the tribe of Zabulon, who "handle the pen of the writer:" David in Psalm, xlv. v. 1, speaks of "the pen of the ready writer:" and Jeremiah, in the passage referred to above, states that Baruch wrote down all his words with ink in a book. The Hebrew manuscripts are of two kinds; *Rolled*, which are those alluded to in the foregoing references, used in the Synagogues, and *Square*, or private manuscripts. The *Rolled* MSS. which contained the Law, were long and narrow, attached at each end to a roller of wood, which served to wind off the columns as they had been read. These copies must be made from the most authentic ancient manuscripts now extant; with pure ink, on parchment made by a Jew for this particular purpose, from the hide of a clean animal, and fastened together by the strings of clean animals. Every skin must contain a certain number of columns of prescribed length and breadth, each column comprising a given number of lines and words; no word must be written by heart or with points, or without being first orally pronounced by the copyist; the name of God is not to be written but with the utmost devotion and attention, and, previously to writing it, he must wash his pen. The want of a single letter, or the redundance of a single letter, the writing of prose as verse, or verse as prose, respectively, vitiates a manuscript: and when a copy has been completed, it must be examined and corrected within thirty days after the writing has been finished, in order to determine whether it is to be approved or rejected. These rules, it is said, are observed to the present day by the persons who transcribe the sacred writings for the use of the Synagogue. The *Square* Manuscripts, which are in private use, are written with black ink, either on vellum, on parchment, or on paper, and of various sizes, folio, quarto, octavo, and duodecimo. Those which are copied on paper, are considered as being the most

modern; and they frequently have some one of the Targums or Chaldee Paraphrases, either subjoined to the text in alternate verses, or placed in parallel columns with the text, or written in the margin of the manuscript. The characters are, for the most part, those which are called the square Chaldee; though a few manuscripts are written with rabbinical characters, but these are invariably of recent date. Biblical critics, who are conversant with the Hebrew manuscripts, have distinguished three sorts of characters, each differing in the beauty of their form. The *Spanish* character is perfectly square, simple, and elegant: the types of the quarto Hebrew Bibles, printed by Robert Stephen and by Plantin, approach the nearest to this character. The *German*, on the contrary, is crooked, intricate, and inelegant in every respect; and the Italian character holds a middle place between these two. The pages are usually divided into three columns of various lengths; and the initial letters of the manuscripts are frequently illuminated and ornamented with gold. In many manuscripts the Masora is added; what is called the *larger Masora*, being placed above and below the columns of the text, and the *smaller Masora* being inserted in the blank spaces between the columns. Farther information upon this particular branch of the present subject, will be found in *An Introduction to the Critical Study and Knowledge of the Holy Scriptures*, by the Rev. T. H. Horne, Edit. Lond. 1821. 8vo. Vol. II. pp. 36-50. In addition to the above, the same authority also mentions that an Indian copy of the Pentateuch is written on a roll of goat-skins dyed *red*, and was discovered by Dr. Buchanan in the record chest of a Synagogue of the Black Jews, in the interior of Malayala, in the year 1806. It measures forty-eight feet in length, and in breadth about twenty-two inches, or a Jewish cubit. The book of Leviticus and the greater part of the book of Deuteronomy are wanting. It appears, from calculation, that the original length of the roll was not less than ninety English feet. In its present condition it consists of thirty-seven skins; contains one hundred and seventeen columns of writing, perfectly clear and legible; and exhibits a noble specimen of the manner and form of the most ancient Hebrew manuscripts among the Jews. The columns are a palm in breadth, and contain from forty to fifty lines each, which are written without vowel points, and in all other respects according to the rules prescribed to the Jewish scribes or copyists. As some of the skins appear more decayed than others, and the text is evidently not all written by the same hand, Mr. Yeates is of opinion, that the roll itself comprises the fragments of at least *three* different rolls, of one common material, viz. dyed goat-skin, and exhibits three different specimens of writing.

Instruments and writings upon the Bark of trees have already been mentioned; and that of the *Philyra*, a species of Linden, was most commonly preferred, although from a passage in Plutarch, it has been imagined that the bark of the oak was also employed. The word liber, the Latin for a book, also signifies the rind of a tree. Previous to the general use of the Papyrus, the leaves of the palm-tree, and of the plant now called mallow, were written on: Pliny and Vopiscus have led some to suppose, that Linen books once existed; but perhaps these were only boards covered with linen, and afterwards spread over with a coating of wax. The time when the Papyrus-rush was applied to the purposes of writing, is much disputed. It is supposed to be alluded to in Isaiah, chap. xix. v. 6, 7. "And they shall turn the rivers far away; *and* the brooks of defence shall be emptied and dried up: the reeds and flags shall wither. The paper reeds by the brooks, by the mouth of the brooks, and every thing sown by the brooks, shall wither, be driven away, and be no *more*."—although some attribute its discovery to the reign of Alexander the Great, which was nearly four hundred years after the time of the Prophet. The Papyrus, according to Pliny, is a reed or rush which grows in the marshy places of Egypt, where the Nile overflows and stagnates, in the form of a large bulrush. It has a fibrous root, and runs up in several triangular stalks, somewhat tapering, to the height of about fifteen feet, and in the thickest parts they are a foot and an half in circumference. They terminate in large tufted heads, which in the making of paper are thrown aside, and the stem was anciently divided into two parts, from which the bark was taken, and the thin films or coats cut off with a sharp instrument, the innermost being considered the best. These coats were then laid upon a table, two or more transversely, and glued together with the muddy water of the Nile; after which they were pressed and dried, made smooth with a roller, or rubbed with a semi-globe of solid glass. For further information on these interesting subjects, vide *An Essay on the Origin and Progress of Letters*, By W. Massey, Lond. 1763, Octavo, pp. 38-72; and the articles, Book, Paper, Parchment, and Roll, in Dr. Rees' *Encyclopedia*.

We now proceed to give some account of ancient Greek Manuscripts, commencing with those found in the ruins of Herculaneum. This famous town originally stood in Campania or Italy; but it was swallowed up in an earthquake produced by an eruption of Mount Vesuvius on August 24th. A.D. 79, together with the City of Pompeii; and after having been buried under the lava for more than 1600 years, Herculaneum was discovered 24 feet beneath the surface of the earth, by labourers digging for a well in 1713, and Pompeii about forty years subsequently, 12 feet below the surface.

The houses and streets in a great measure remain entire, and from them at different times, have been recovered busts, statues, paintings, utensils, and ancient manuscripts written on Papyrus, both in Greek and Latin. Thirty-nine years after the ruins of Herculaneum had been laid open, an excavation was made in the garden of a house at Resina, and there, in the remains of a house, was found a great number of volumes of burnt Papyrus, many of which were at first destroyed by the workmen; but when it became known that they were fragments of ancient MSS. the unfolding of them became an object of the greatest interest to all the classical world. The precise spot where the discovery of the first of the carbonised rolls of Papyrus was made, was the Bosco di Sant' Agostino, a shrubbery belonging to the Church of St. Augustine, close to Portici towards Torre del Greco; it was covered over with ashes, and a hard tufa or lava to the depth of 120 English feet. In the space of a year or two, about 250 Greek and Latin rolls were found; and the Library near which they were contained, appeared to belong to a large palace. Its floor was of elegant mosaic; and the books, which in 1754, were found to be 337 in number, all in Greek, were preserved in presses inlaid with different sorts of wood, disposed in rows and ornamented with cornices. These volumes were all rendered brittle by the fire, but there were likewise eighteen larger rolls in Latin, lying separately, and more injured than the Greek. The first Papyrus was at length unrolled, and proved to be a Treatise of Music by Philodemus the Epicurean, whilst another was on the subject of that class of philosophy. These Papyri, were however, at first so firmly connected together, that every roll was almost as hard as if it had consisted but of one piece; all attempts to open them seemed to be in vain, and it was only by slitting them that some words were discovered. At length the King of Naples sent for one father Antonio Piaggi, a writer at the Vatican, by whom a machine was invented which held the back of the roll; whilst he began to open the volume, to separate one leaf from another, to line the lamina which he cut off with goldbeater's skin, at the same time wetting the roll to soften the gum which held it together. When a piece was loosened, it was taken off at a place where there were not any characters and placed between two pieces of glass, after which an exact fac-simile was made of it also by Piaggi, and this copy was delivered over to the Cardinal Mazzochi, who endeavoured to illustrate and restore the fragment. These however were laborious and slow operations, since a whole year was consumed in opening about half a roll; and some of the Papyri were so fine, that unrolled they would have extended to nearly one hundred feet in length. The Treatise on Music was a small philosophic tract, written in the

manner of Plutrarch; not illustrative of the art itself, but condemning it as pernicious to society. The commencement was wanting, but the Papyrus was written across in columns of about twenty lines, each of four inches long, with the space of an inch between each column. The letters were capital ones, very legible, and the words were without any abbreviations. Such was the state of the Herculanean MSS. when his Royal Highness the Prince of Wales, proposed to the Neapolitan Government to defray the expenses of unrolling, decyphering, and publishing them; which offer being accepted, the Rev. John Hayter was sent to Naples in 1802, and under his superintendance many Papyri were unrolled, of which an account will be found in his very interesting *Report upon the Herculaneum Manuscripts, in two Letters addressed by permission to His Royal Highness the Prince Regent, Lond.* 1811. *Quarto.* A much more extended narrative concerning these rolls, their history, contents, and unfolding, will be found in the Herculanensia already cited, pp. 108-169, and the article Herculaneum in the *Supplement to the Encyclopedia Britannica*, Edinb. 1820, 4to. vol. iv. part ii. pp. 624-632: See also the *Bibliotheca Britannica*, By Robert Watt, M. D. Edinb. 4to. Vol ii. under the word Herculaneum. We have next to speak concerning Greek manuscripts of a later period, and since, in so doing, it will not be possible to give a better general idea of them, than that which was written by the Rev. T. H. Horne, in his work before-mentioned, we have abstracted the following account from vol. ii. pp. 50, ut supra. "The Greek manuscripts which have descended to our time, are written either on vellum or on paper; and their external form and condition vary, like the manuscripts of other ancient authors. The vellum is either purple coloured, or of its natural hue, and is either thick or thin. Manuscripts on very thin vellum were always held in the highest esteem. The paper also is either made of cotton, or the common sort manufactured from linen, and is either glazed or *laid* (as it is technically termed), that is, of the ordinary roughness. Only three manuscript fragments on purple vellum are known to be extant; one in the Cottonian Library in the British Museum, another in the Imperial Library at Vienna, and the third in the University Library at Dublin. The first of these, consisting only of four leaves, contains fragments of St. Matthew's and St. John's Gospels; the letters are silver on a faded purple ground, and the Greek words for *God, Jesus, Lord, Son*, and *Saviour*, are written in letters of gold. The Vienna manuscript comprises fragments of the book of Genesis in Greek, and a small portion of St. Luke's Gospel. The Dublin manuscript is a *Codex Rescriptus* of St. Matthew's Gospel. The *Codex Claromontanus*, is written on very thin vellum. All manu-

scripts on paper are of much later date; those on cotton paper being posterior to the ninth century, and those on linen subsequent to the twelfth century; and if the paper be of a very ordinary quality, Wetstein pronounces them to have been written in Italy, in the fifteenth and sixteenth centuries. The letters are either capital (which in the time of St. Jerome were called *uncial*, i. e. initial) or *cursive*, i. e. small: the capital letters, again, are of two kinds, either unadorned and simple, and made with straight thin strokes, or thicker, uneven and angular: some of them are supported on a sort of base, while others are decorated, or rather burthened with various tops. As letters of the first kind are generally seen on ancient Greek monuments, while those of the last resemble the paintings of semi-barbarous times, manuscripts written with the former are generally supposed to be as old as the fifth century, and those written with the latter are supposed to be posterior to the ninth. Greek manuscripts were usually written in capital letters till the seventh century, and mostly without any divisions of words; and capitals were in general use until the eight century, and some even so late as the ninth; but there is a striking difference in the forms of the letters after the seventh century. Great alterations took place in the eighth, ninth, and tenth centuries: the Greek letters in the manuscripts copied by the Latins in the ninth century, are by no means regular; the *α*, *ε*, and *γ*, being inflected like the *a*, *e*, and *y*, of the Latin alphabet. Towards the close of the tenth century, small or cursive letters were generally adopted; and Greek manuscripts written in and since the eleventh century are in small letters, and greatly resemble each other, though some few exceptions occur to the contrary. Flourished letters rarely occur in Greek manuscripts of the thirteenth, fourteenth, and fifteenth centuries. All manuscripts, the most antient not excepted, have erasures and corrections; which however were not always effected so dextrously, but that the original writing *may* sometimes be seen. Where these alterations have been made by the copyist of the manuscript (*à primâ manu*, as it is termed,) they are preferable to those made by later hands, or *à secundâ manu*. These erasures were sometimes made by drawing a line through the word, or, what is tenfold worse, by the pen-knife. But, besides these modes of obliteration, the copyists frequently blotted out the old writing with a *sponge*, and wrote other words in lieu of it: nor was this practice confined to a single letter or word, as may be seen in the *Codex Bezæ*. Authentic instances are on record, in which whole books have been thus obliterated, and other writing has been substituted in the place of the manuscript so blotted

out. These manuscripts are termed *Codices Palimpsesti*, or *Rescripti*. Before the invention of paper, the great scarcity of parchment in different places induced many persons to obliterate the works of ancient writers, in order to transcribe their own or those of some other favourite author in their place: hence, doubtless, the works of many eminent writers have perished, and particularly those of the greatest antiquity; for such as were comparatively recent were transcribed, to satisfy the immediate demand; while those which were already dim with age, were erased. It was for a long time thought, that this destructive practice was confined to the eleventh, twelfth, thirteenth, and fourteenth centuries, and that it chiefly prevailed among the Greeks; it must in fact be considered as the consequence of the barbarism which overspread those dark ages of ignorance; but this destructive operation was likewise practised by the Latins, and is also of more remote date than has usually been supposed. In general, a *Codex Rescriptus* is easily known, as it rarely happens that the former writing is so completely erased, as not to exhibit some traces: in a few instances, *both* writings are legible. Montfaucon found a manuscript in the Colbert Library, which had been written about the eighth century, and originally contained the works of Saint Dionysius: new matter had been written over it three or four centuries afterwards, and both continued legible. Muratori saw in the Ambrosian Library a manuscript, comprising the works of the venerable Bede, the writing of which was from eight to nine hundred years old, and which had been substituted for another upwards of a thousand years old. Notwithstanding the efforts which had been made to erase the latter, some phrases could be deciphered, which indicated it to be an ancient pontifical. The indefatigable researches of the Abate Maio (who has recently been appointed the principal keeper of the Vatican Library at Rome) have discovered several valuable remains of biblical and classical literature in the Ambrosian Library at Milan. Before quitting the subject of manuscripts in general, we must take the opportunity of referring the reader to the Prefaces attached to the *Catalogue of the Harleian MSS.*; *Ayscough's Catalogue of Sir H. Sloane's and Dr. Birch's MSS.*; *Notices et Extraits des Manuscrits du Roi.*; *Astle's Origin and Progress of Writing* already cited; and the First Day of the *Rev. T. F. Dibdin's Bibliographical Decameron.*

The ancient manuscript copies of the Scriptures in the Greek tongue, which are still extant, are both numerous and authentic; since of those which have been collated, there are nearly five hundred, whilst of those which are scattered through private collections, the amount is unknown. The Greek was selected as the language in which

the *New* Testament should be written, because it was read, spoken, and generally understood, throughout the Roman Empire, and more especially in the Eastern Provinces; and to the universality of its use, Cicero, Seneca, and Juvenal bear record, since it was as well known, and stood in the same degree of utility in the higher and middle classes of society, as the French tongue does at the present time. Very few manuscripts contain the whole, either of the Old or New Testament, as by far the greater number have only the four Gospels, since they were the most frequently read in the Primitive Churches; but some again are composed of the Acts of the Apostles and the Epistles of St. Paul, and a very few possess the book of the Revelations. The ancient Scriptural Manuscripts are written without accents, aspirates, or any separation between the words, although they exhibit nearly the same orthography which is to be found in Greek printed books; with the exception that many words are abbreviated by putting only two or three of the letters, and drawing a line above them; as K C, for Kurios, Lord, Y C, for Vios, a Son, &c. Between the tenth and the fifteenth centuries, the Greek MSS. contain a great variety of abbreviations, or compound characters for certain words, similar to those on which we have already given an article at page 290 ante; but monograms or joined letters, were of very high antiquity with the Greeks, since in the *Siciliæ Veterum Inscriptionem, &c.* Palermo, 1769, p. 54, there are several proofs of their having been used in Syria, Egypt, and Greece: the practice was afterwards adopted by the Etruscans, Romans, Saxons, and by those other nations. The most ancient Biblical Manuscripts extant, have their contents divided by *Titloi*, Titles, and *Kephalia*, Heads; but originally, the Sacred Books were written without any partitions into chapters or verses, so that a whole book copied out according to the ancient custom of placing all the words continuously, formed but one extended word. At the commencement of a new book, which is always on the top of a page, the first few lines are very frequently written in vermillion. It would not accord either with the space or the plan of the present work, to enter into a detail of the systems which Biblical Critics have invented concerning the authority and the value of the various families or editions of the Sacred Manuscripts, especially as this subject has been so copiously and so ably treated by the Rev. T. H. Horne, from whose *Introduction to the Scriptures* we have already so largely quoted: but as one of the most eminent and ancient of those Manuscripts has been printed *in fac simile*, and Mr. Richard Taylor has (with the consent of the Proprietor, the Rev. H. H. Baber, one of the Librarians of the British Museum,) obligingly

furnished us with a specimen of the types used for the publication, we shall conclude this article with a short account of it. The *Codex Alexandrinus*, or Alexandrine Manuscript; preserved in the British Museum, was deposited there in the year 1753. It was originally sent as a present to King Charles I. from Cyrillus Lucaris, a native of Crete, and Patriarch of Constantinople, by Sir Thomas Rowe, Ambassador from England to the Grand Seignor, in 1628. Cyrillus brought it with him from Alexandria, where, probably it was written; and in a Memorandum attached to it, he states, that it was written according to tradition, by a noble Egyptian lady, named Thecla, soon after the Council of Nice; (A. D. 325.) but that although Thecla's name had been obliterated from the end of the Manuscript, yet that the other books of the Christians had been so treated after the Turks had expelled Christianity from Egypt. Notwithstanding that such was the original account of this manuscript, Mattheus Muttis a friend and contemporary of its possessor Cyrillus, states that it was brought from one of the twenty-two Monasteries on Mount Athos, in Greece; which the Turks never destroyed, and which were the great repository for Manuscripts of the New Testament. It is certain that Cyrillus visited Mount Athos previous to his going to Alexandria; and it has been imagined that having procured the Manuscript in Greece, he carried it into Egypt, and then brought it back with him to Constantinople. The Manuscript itself, is written on vellum, in uncial or initial letters, without either accents or aspirates, and with some abbreviations similar to those already mentioned. It occupies four folio volumes, of which the first three contain the whole of the Old Testament, and the Apocryphal books, whilst the fourth consists of the New Testament, the first Epistle of St. Clement to the Corinthians, and the Apocryphal Psalms ascribed to Solomon. There are some omissions in this manuscript, and some interpolations; as the Epistle of Athanasius to Marcellinus preceding the Psalms, followed by a Catalogue containing those which are to be said in prayer for every hour of the day and night. There are also fourteen hymns, partly apocryphal, partly biblical, one of which is to the praise of the Virgin Mary. The arguments of Eusebius are prefixed to the Psalms, and his Canons to the Gospels. The following is a specimen of the letters taken from page 34 of Mr. Baber's edition of this MS. hereafter described, the words of which are from Genesis, chap. 50. v. 26. which is followed in the original by the words GENESIS KOSMOU, the Beginning of the World, written in larger capitals than the rest. To make the ensuing extract intelligible, we have added a reading in common Greek, and an English translation set up to resemble the original.

ΚΑΙΕΤΕΛΕΥΤΗCΕΝΙΩCΗΦ'ΕΤΩ
ΕΚΑΤΟΝΔΕΚΑ·ΚΑΙΕΘΑΨΑΝ
ΑΥΤΟΝ·ΚΑΙΕΘΗΚΑΝΑΥΤΟΝ
ΕΝΤΗCΟΡΩΕΝΑΙΓΥΠΤΩ· ΤΘ

ΚΑΙ ΕΤΕΛΕΥΤΗΣΕΝ 'ΙΩΣΗΦ 'ΕΤΩΝ
ΕΚΑΤΟΝ ΔΕΚΑ ΚΑΙ ΕΘΑΨΑΝ
ΑΥΤΟΝ, ΚΑΙ ΕΘΗΚΑΝ ΑΥΤΟΝ
ΕΝ ΤΗ ΣΟΡΩ ΕΝ ΑΙΓΥΠΤΩ.. ΤΕΛΟΣ

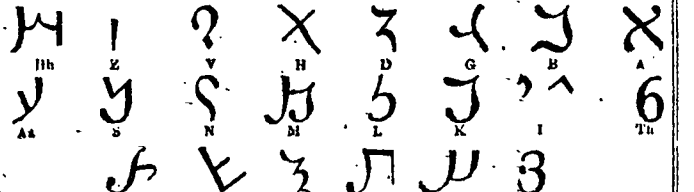
AND *HEIS* DEAD JOSEPH *WAS* YEARS
. AN HUNDRED *AND* TEN AND THEY BURIED
HIM AND DEPOSITED HIM
IN A COFFIN IN EGYPT. THE END.

We have already observed, that the greater part of this invaluable manuscript has been published, and we shall make one extract more from Mr. Horne's volumes, to give a few particulars concerning this amazing undertaking. "A fac-simile of the *Codex Alexandrinus* was published in folio by the late Dr. Woide, principal librarian of the British Museum, with types cast for the purpose, line for line, without intervals between the words, precisely as in the original. The following is the title of Dr. Woide's splendid work.—*Novum Testamentum Græcum, e Codice MS. Alexandrino, qui Londini in Bibliotheca Musei Britannici asservatur, descriptum, a Carolo Godofredo Woide. Londini ex prelo Joannis Nichols, Typis Jacksonianis,* MDCCLXXXVI. Twelve copies were printed on vellum. The fac-simile itself fills two hundred and sixty pages; and the preface,

comprising twenty-two pages, contains an accurate description of the manuscript, illustrated by an engraving representing the style of writing in various manuscripts. To this is subjoined an exact list of all its various readings, in eighty-nine pages; each reading is accompanied with a remark, giving an account of what his predecessors, Junius, (i. e. Patrick Young), Bishop Walton, Drs. Mill and Grabe, and Wetstein, had performed or neglected. To complete this work, there should be added the following: *Appendix ad editionem Novi Testamenti Græci, e Codice Alexandrino descripti a G. G. Woide, in qua continentur Fragmenta Novi Testamenti juxta interpretationem dialecti superioris Ægypti quæ Thebaica vel Sahidica appellatur, e Codd. Oxoniens. maxima ex parte desumpta cum dissertatione de Versione Bibliorum Ægyptiaca, quibus subjicitur Codicis Vaticani collatio. Oxonii: E Typographeo Clarendoniano*, 1799, Folio. This work was edited by the Rev. Dr. Ford. In 1812, Mr. Baber published, by subscription, a fac-simile of the book of Psalms, from the manuscript now under consideration, of which twelve copies are *on vellum*, to match with the same number of copies of the New Testament. To complete the Old Testament in a similar manner, was an undertaking too vast and extensive for an unbeneficed clergyman. In consequence, therefore, of a memorial by Mr. B., seconded by the recommendation of several dignataries of the church, as well as professors and heads of colleges in the two universities, the British Parliament engaged to defray the expenses of completing this noble undertaking; (See the Memorial and other Proceedings in the Literary Panorama, vol. i. N. S. pp. 465-478.); and Mr. Baber is now rapidly proceeding in his laborious task. The Pentateuch and the Historical Books, together with the Prophetic Books and the Psalms, are completed in a splendid folio size, so as to represent every iota of the original manuscript in the most faithful manner. The better to preserve the identity of the original, instead of spinning out the contracted various readings, in the margin, by letters in full, (as Dr. Woide had done in his fac-simile of the Alexandrian manuscript of the New Testament) fac-similes of such various readings, cut in wood, are inserted precisely in the places where they occur, filling up only the same space with the original. The tail-pieces, or rude arabesque ornaments at the end of each book, are also represented by means of fac-similes in wood. The work will consist of four volumes in folio; three comprising the text of the Old Testament, and a fourth *containing* prolegomena and notes. The edition is limited to two hundred and fifty copies, and twelve are on vellum. They are such as reflect the highest credit on the printers, Messrs R. and A. Taylor.

PALMYRENIAN.

THE country of Palmyrene, in which this language first had its rise, was a spacious and fertile province situate in the midst of a frightful desert in Syria; bounded by the River Euphrates to the East, Rocky Arabia to the South, Celesyria to the West, and the country of Chalybontis to the North. Its chief cities were Palmyra, the building of which is attributed to Solomon, and Thapscus. The Scriptural word for Palmyra, which gave name to the country in which it stood, is Tadmor; vide I Kings, ix. v. 18. "And Baalath, and Tadmor in the wilderness, in the land:" and II Chronicles, viii. v. 4. "And he built Tadmor in the wilderness, and all the store cities, which he built in Hamath." Even at the present time the Arabs and Syrians call it Tadmur and Tatmor; and the name is supposed to have been originally derived from the Hebrew Thamar, a Palm, which once flourished about the city in conjunction with the Olive. From this word, Schultens in his Geographical Commentary on the Scriptures, deduced the present name of Palmyra; since he states, that in the Arabian spelling the word was written Thathmor, or Tatmor, an adjective signifying Palmiferous or Palm-bearing but that it was altered by the Romans, first to Talmura, and then, in consequence of its derivation, to Palmura, or Palmyra. The following alphabet, which in form has great affinity with the Chaldean Hebrew, was first decyphered by the Abbé Barthelemi, and is attributed to the inhabitants of Palmyrene, who, it has been already stated, were Syrians. It was written from the right to the left.



ILLYRIAN LANGUAGES.

That country which in ancient Geography was called Illyria, Illyricum, or Illyris, although situated in Europe, next the Adriatic Sea, has never had its boundaries precisely ascertained; for whilst some would confine it to the space between the rivers Naro and Drilo, in Greece, others, as Pliny and Ptolemy, extend its limits to include Liburnia and Dalmatia, which border upon the South of Germany. Its original language was most probably the Greek; but the great Eastern and Western divisions of the country, had each, according to Duret and John Baptist Palatin an alphabet of its own. The provinces upon the Eastern side, used one that still resembled that common to their neighbours the Grecians; but the people who dwelt upon the West, are said to have adopted a series of letters invented by St. Cyrill or St. Jerome, which was very similar to the Sclavonian, Dalmatian, and Modern Russian. The invention of the same characters, are also attributed to one Methodius a Bishop and a native of Illyricum, who lived about the period of the Incarnation of Christ; who translated the Scriptures into his own tongue; and who persuaded the Illyrians to discontinue the ceremonies of the Roman church, and the Latin language, which had probably been brought into the country when the Pro-Prætor Anicius Gallus triumphed over Gentius the King of Illyricum, in the year of Rome 585, or about 168 years before the Birth of Christ, and reduced it to a Roman province.

SCLAVONIAN.

From this tongue, as one of the most ancient descendants of the Illyrian Greek, numerous others have been formed. The Sclavi or Salvi were a wild and wandering people, of obscure origin but of very great extent throughout the Northern nations, of Europe and part of Asia. The Greeks and Romans called them Scythians and Sarmatians; and Poland, the Northern parts of Russia, Prussia, and Lithuania, were probably their ancient holds, but from those countries they spread out to Dacia, Germany, and the lands lying beyond the Danube. Their name is said to have been derived from the word Slava, which in their own tongue signifies praise or glory; but others on the contrary deduce it from the expression Slave, alluding to their wretched situation after they were conquered by the Venetians, about the eighth century. The Sclavonian language is considered next to the Arabic, of the universality of which we have already spoken of at page 310 ante, to be the most extensive in the world; since it is spoken from the Adriatic to the North Sea, and from the Caspian to the Baltic, by a great variety of people whose descents are all deduced from the ancient Selavi. The Sclavonian or Cyrulician characters are of that genus denominated Glagolitican. In the ninth

century after the Birth of Christ, a Grecian Philosopher named Constantine, first wrote the Sclavonian language in the Greek capital letters, as previously to that period, it had been universally written in those of the Latin. As however, the Sclavonian tongue contained sounds both of vowels and of consonants, which the Greek alphabet had not the power of expressing, Constantine supplied these peculiarities by the invention of new characters, and he also gave new names to the ancient Greek letters, as well as to those which he had thus designed; and on this account he is denominated the inventor of the Sclavonian alphabet., In the year 880, Pope John XII. first granted to the Sclavonians the privilege of performing Divine Service in their own tongue. These letters however did not retain the name of their author until his death; for, as he became Bishop of Moravia under Pope Nichilus I. in 867, &c, upon going to Rome, he changed his Latin name of Constantine to the same word in Greek, namely, Cyrillus, which mutation has caused Historians to call the early letters of the Sclavonians the Cyrillician; and sometimes to write of him as two persons, father and son. Arising out of this character, which from the Bull of Pope John was permitted to be used in sacred matters, were those letters called the Glagolitican, the name of which is derived from the Sclavonian word Glagoliti, speech; signifying the language of the common people, in contradistinction to that used by the Priests. These characters are sometimes called the Hieronymianum, because their invention has sometimes been attributed to St. Jerome; but as that eminent father lived in the third century, and the Glagolitican letters are even younger than the Sclavonians, it is evident that such a supposition is erroneous. Farther information on the history of the Sclavonians will be found in *Gibbon's History of the Decline and Fall of the Roman Empire*, vols. vii. x. and in the first vol. of *Tooke's Russian Empire*. Concerning that of their language the reader may consult *De Origine, Jure, ac Utilitate Linguæ Sclavonicæ*, by John Fischer, Wittemb. Quarto. *Origo Characteris Sclavonici*, by John Leonard Frisch. 4to. *Historiam Linguæ Sclavonicæ*, by the Same. 4to. And of Elementary Books a list will be found in *A Catalogue of Dictionaries, Vocabularies, Grammars, and Alphabets*, by William Marsden, F. R. S., &c. London. 1796. 4to.

DALMATIAN.

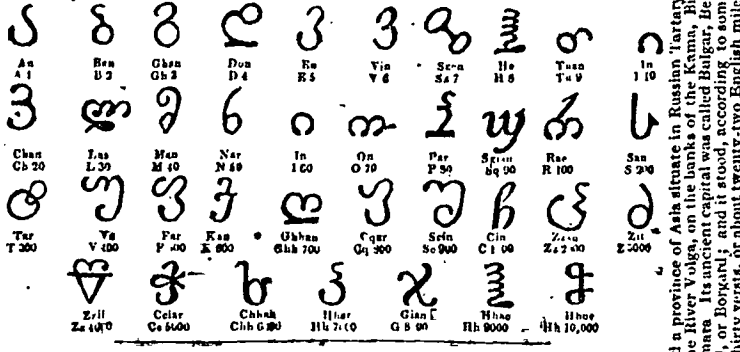
THAT extensive tract of country, which was anciently called Dalmatia, was situate on the Eastern shores of the Adriatic Sea, now the Gulf of Venice; and formed a part of Illiricum. It was separated from Liburnia or Croatia by the River Titius, to the North-west; and Naro flowed upon the South-east. Ancient tradition states, that Dalmatia abounded with gold; and "the land which produced gold,"

is an epithet bestowed upon it by Martial, in one of his epigrams. Its name was originally derived from Delminium or Delminum, the title of its ancient capital, which the Romans took and destroyed in the year of Rome, 579, or 175 years before the Birth of Christ. When the Avari obtained possession of this country, it was called by the Christians Pagania, because the Avari were idolators; but the Illyrians altered the word to Poganin. The Dalmatians were a brave, but rude and savage people, who lived by plunder; and who, after having been conquered by the Romans under Metellus, 175 years before Christ, five several times shook of their yoke, and for the space of two hundred and twenty years opposed their power; but in the reign of Augustus Cæsar, when the Roman Provinces were divided between the Emperor and the Senate, Dalmatia became the property of the latter, though it was afterwards voluntarily ceded to Augustus, who governed it by a Quæst or. At the decease of Constantine the Great, which occurred on Whitsunday, May the 22nd, A. D. 337, Dalmatia was considered as a part of Illyricum. The inroads of the Northern barbarians at one period ravaged this country, and it was for some time under the power of the Goths, until the Emperor Justinian, in A. D. 536 re-conquered it, along with the whole of Italy. About the end of the reign of Heraclius, A. D. 640, the Slavi, or Sclavonians, established themselves in Dalmatia, and the land was then governed by its own peculiar Kings; the last of whom dying without issue, bequeathed the kingdom to his Consort, who again left it to her brother Ladislaus, King of Hungary. In the 15th century the Venetians conquered the whole of Dalmatia, and restored only a portion of it to the Hungarians, reserving for themselves the best maritime parts. The Turks afterwards dispossessed the Venetians of some Provinces, and a small maritime territory was allotted to the Republic of Ragusa. The present language of Dalmatia, is the Sclavonian; but the following alphabet, which is said to have been invented in the third century, by St. Jerome, who was himself a native of that country, is usually called Dalmatian. Duret, page 788 of this volume, already referred to, states that it is difficult to pronounce, but that many Missals, the Latin Breviary, and even the Old and New Testaments have been translated into it from the Hebrew and Greek.—Perhaps this alludes to the ancient Sclavonian version of the Scriptures, which Cyrillus of Thessalonica made in conjunction with Methodius, by whom also, the Christian Gospel was preached to the Bulgarians. Croatia, the ancient Liburnia, forms one of the boundaries of Dalmatia, and use the same characters as those hereafter exhibited. The New Testament, translated by Truber, the pastor of Tubingen, was first published there in 1551; and the whole of the Scriptures at Wittenburg in 1584.

GEORGIAN.

THE country of Georgia is situate in Asia between the Caspian and the Black Seas, but the name is more particularly appropriated to that territory which lies between the Caspian Sea and Mingrelia, anciently known by the name of Iberia. The original inhabitants of Iberia are supposed to have been a wandering people of Mount Caucasus, and their alphabet of capital letters is said to have been formed from the Greek, which language, Postellus states, that the Georgians use in their prayers, although they employ the Tartaric tongue upon all other occasions. This country is said by some authors to have received its name from the Martyr St. George, the patron Saint thereof, to whose memory the written character is supposed to be dedicated; but others assert, that it was called Georgia, from the Georgi, who anciently inhabited the adjacent countries. The Christian Gospel was brought into Georgia in the time of the Emperor Constantine the Great; and the general belief is that of the Greek Church, excepting that the Georgians have a Patriarch of their own, who resides upon Mount Sinai in Palestine. Tradition asserts, that the Georgian version of the Scriptures was originally made in the eighth century, by Euphemius a native of Georgia, and founder of the Iberian Monastery upon Mount Athus, in Greece, where his original MS. was discovered in 1817. In this version, however, the greater part of the books of the Old Testament was lost in the wars between the Persians, the Turks, and the Georgians. The ensuing letters are written from left to right, and are the cursive or running-

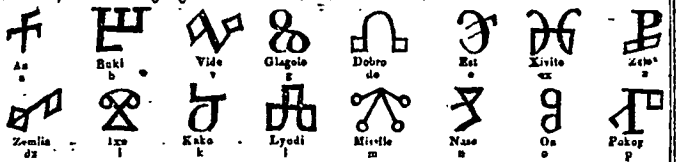
hand characters; but besides these there are three other series known in the country; namely, the larger sacred letters, the lesser sacred letters, and the characters used by the common people.



BULGARIAN.

GEOGRAPHERS divide the country which was inhabited by the people who spake this language, into Great and Little Bulgaria. The former division now forms part of the Government of Caucassus, being incorporated with the Russian Dominions; but it properly signified a province of Asia situate in Russian Tartary, beyond the River Volga, on the banks of the Kama, Bielaia, and Samara. Its ancient capital was called Bulgar, Belogar, Belgard, or Boygard; and it stood, according to some authors, thirty versts, or about twenty-two English miles and an half from the Kama, and five versts, or about three miles and an half from the Volga: others state, that the

Volga, flowed past the town. Bogard was first ravaged by the Tartars in 1224, and in 1500, was entirely destroyed by the Russians. Little Bulgaria is a province of European Turkey, bounded on the North by the Danube and Wallachia, on the East by the Black Sea, on the South by Mount Hæmus, which separated it from Romania and Macedonia, and on the West by Servia. It was formerly denominated the Lower Mysia; but its present name is derived from the Bulgarians, who now inhabit it. The Bulgarians were originally a tribe of Sclavonians, which was supposed to have occupied Asiatic Scythia, and the countries lying to the North of the Caspian Sea, near the Volga; whence it has been said that they derived the name of Volgari, which was afterwards changed into Bulgari, and thence their country was called Volgaria and Bulgaria. The following is a Bulgarian alphabet, in which the characters mark its Illyrian descent, but the language is a dialect of the Sclavonian.



The names to the above letters are in the Illyrian and Servian tongues. An extended history of the Bulgarians will be found in the seventeenth volume of the *Ancient Universal History;* and in vols. viii.---xi. of *Gibbon's Decline and Fall of the Roman Empire.*

RUSSIAN.

The modern Sclavonian language is that known at the present time under the title of the Russian; but the Sclavonian itself with its own peculiar character, is still used in the

offices of religion in Russia. Schlœtzer considers it as preferable to all the European languages; and it is soft, expressive, and rich in words, but it requires great flexibility in the organs of utterance. The Russian alphabet of the present day is exhibited in the annexed table; but even the native grammarians are yet undetermined respecting the real number of their letters, for whilst some estimate them at forty-one, others have stated their amount to be only thirty-eight, but it should be observed, that some of them are but notes of accents in pronunciation. The Russian historians relate, that the Muscovians were without a written character until the time of Michel the Paphlagonian, Emperor of the East, in A. D. 1034-40; under whom they assumed the letters and language of the Sclavonians. According to the same authorities, however, it is ascertained that previously to this adoption, about the year 959, Olga, the wife of Igor, Sovereign of Russia, sent Ambassadors to Otho, Emperor of the West, for Missionaries to instruct her people; which was complied with by St. Adelburg, Bishop of Magdeburg, in 962. These Missionaries brought with them many curious Grecian pictures of Saints, &c. which are frequently illustrated by inscriptions in the Greek characters of that period; and it has been imagined that not the Art of Painting only was then introduced into Russia, but all that the inhabitants of the Don knew of letters, perhaps until the time above mentioned, was thus originally made known to them. Upon the introduction of the Christian faith, according to the profession of the Greek Church, the Russians received the paintings of the Messiah, the Saints, and the Virgin, brought to them by their new instructors with the greatest joy; but to protect them from destruction in a country where they could never be renewed, they were covered over with plates of gold excepting the faces only. The Sclavonian, or ancient Russian version of the Scriptures has been already mentioned; but although this be the received translation of the Greek Church, it is no longer intelligible to the common people of Russia. For their peculiar use, M. Glueck, a Livonian clergyman, made a new translation into the modern Russ, which was printed at Amsterdam, in 1698; but as the language, even since that period, has undergone considerable changes, the Emperor Alexander I. by an edict issued in February 1816, directed the Holy Synod of Moscow to prepare a New Version, and in March 1819, it was commenced by the publication of the four Gospels. The Bible in the Sclavonian tongue used formerly to sell in Russia from twenty-five to thirty rubles, or about six guineas of English money; but a new edition of it appearing in 1751, reduced its price to about twenty shillings. St. Cyrill of Jerusalem is the favorite Russian commentator upon the Scriptures; but the

works of St. John of Damascus, St. Gregory Nazianzen, St. John Chrysostom, and Ephraim of Edessa, are also held in very great estimation. Having thus briefly stated some few particulars concerning the Russian language, we now proceed to exhibit its alphabet, the types of which were cast at the Letter Foundery of Dr. Fry in Type Street, from Alphabets in the *Vocabularia totius orbis Linguarum comparativa*, collected and published by command of the late Empress of Russia, in 2 vols. 4to.

Modern Russian Alphabet.

Figure.	Power.	Name.	Value.	Figure.	Power.	Name.	Value.
А а	a	Az.....	1	І ї	ї	I..i..	10
Б б	b	Buki ..	2	К к	k	Kako..	20
В в	v	Vœdi...	—	Л л	l	Liudi	30
Г г	g	Glagol .	3	М м	m	Mislœt.	40
Д д	d	Dobro..	4	Н н	n	Nasch.	50
Е е	d	Iest....	5	О о	o	On. ...	70
Ж ж	j	Schiviet	—	П п	p	Pocoi..	80
S s	z	Zelo....	6	Р р	r	Rizi ..	100
З з	z	Zemlia..	7	С с	s	Slovo..	200
И и	i	Ische...	8	Ш ш	t	Twerda	300

Modern Russian Alphabet continued.

Figure.	Power.	Name.	Value.	Figure.	Power.	Name.	Value.
У у	u	On. ..	400	Ы І Ы	yeri	Ieri ..	—
Ф ф	ph	Phert. .	500	Б ь	yer	Ieer..	—
Х х	ch	Cheer. .	600	Ѣ ѣ	yat	Int...	—
Ц ц	tz	Schtscha	900	Э э	é	—	—
Ч ч	tsch	Ier...	90	Ю ю	yu	Ioo, or Iou	—
Ш ш	sch	Tsi....	—	Я я	ya	Ia....	—
Щ щ	Schtsch	Tscherf	—	Ѳ Б	th	Thita.	9
Ъ ъ	yeri	Scha. .	—	У у	i	Ischitze	—

The authorities which have been used in this article were the following, besides those which are continually referred to: *Grammatica Russica*, by H. W. Ludolf. Oxford. 1696. 8vo. *Universal History*. Vol. xxxv. *Russiskya Gramatika, Michaila Lomonosova*, Petschatana (Petersburg.) 1755. 8vo. written entirely in the Russian language. *Elemens de la Langue Russe*, by John Baptiste Maudru. Patis. 2 Vols. 8vo. *New, Familiar, and Easy Dialogues in Russian and English*, by James Langen Petersburg. 1809. 8vo. *Travels in Russic, Tartary, and Turkey*, by Edw. Daniel Clarke. LL. D. Cambridge. 1810. Quarto. See also *Marsden's Catalogue of Grammars, &c.* and a similar Catalogue of introductory books published by Messrs. Boosey and Sons. 8vo.

GOTHIC LANGUAGES.

RUNIC.

When the sons of Japhet migrated from their paternal country of Asia, they spread themselves over Europe, and

the earliest of their tribes which inhabited the coasts of this quarter of the world were the Celts, and the Cimmerians or Gomerians, so called from their leader Gomer, the eldest son of Japhet. It is supposed by Herodotus, Melpom. § xl. that they were settled in Europe before the year 680, B. C., about which time also the Goths who were descended from Magog, the second son of Japhet, seated themselves in the countries lying to the North of the Baltic, in the South-Eastern part of Sweden. Jornandes, in his *Rerum Geturum*, in which he abridges the Gothic History of Cassidorus, states that the Goths originally came from the great Peninsula of Scandinavia, which consisted of the present countries of Sweden, Norway, Lapland, and Finland; thus supposing them to have been a formed colony, instead of an original nation. It has also been imagined, that after the Gomerians had passed from Asia through Russia, and had been for some time settled in Sweden, that Eric, a contemporary with Serug, the grandfather of Abraham, conducted a colony from the original people across the Baltic, which peopled the Islands in that sea, the Chersonesus, and the adjacent countries upon the Continent. Westward of the Goths were seated the Vandals, who from their great similarity to them in manners, complexion, religion, and language, are imagined to have formed a part of the same great and powerful people. The Goths by subsequent emigrations, continued to spread over Scythia, and around the Euxine Sea, whence they despatched numerous colonies to Dacia, Thrace, and Mœsia or Italy, every where forcing the ancient inhabitants to give up their possessions. Although the Goths, according to the situations of their colonies, were called by many different names, yet through all they consisted of the same people. Thus, the Eastern Goths, who occupied that part of Scandinavia which borders upon Denmark, were denominated Westrogoths, or Western Goths, which was softened by the Latins into Visigoths; whilst those who dwelt in the more Eastern parts near the Baltic, were entitled Ostrogoths, or Eastern Goths. This nation is also called by such writers as were their contemporaries, Getes and Scythians; but their name of Goth is said to have been derived from the ancient German word Goth, good, from their kindness and hospitality to strangers. As the Goths increased in Scythia, they resolved to seek new settlements; and for this purpose they emigrated Eastward, under the conduct of the celebrated Odin, or Woden, King of the Asgardians, who were seated in that part of Scythia beyond Mount Imaus to the West. After performing many heroical adventures, Woden led his band into Sweden, where he settled and reigned until his death; after which he became so famous, that the Northern nations considered him as a Deity, and paid divine

honours to his memory. The country of Asgardis, from which Woden had emigrated, consisted of that part of Asia, which is now called Georgia, and which is connected on the Southern parts with Persia; and in this land, before the encroachment of the Roman Armies had induced him to retire from it, he had invented the characters which are now called the Runic. The forms of these letters consisted chiefly of rude straight lines, which greatly resembled the Roman Capitals; and perhaps it was from this circumstance that they derived their name from Rune, an ancient Gothic word, signifying to cut, or else from Ryn a furrow, or from Ren a gutter or channel, as these letters were originally cut in wood or stone, and thus bore a strong resemblance to a trench. Others, however, derive the word Runic from Ryne, Art, and especially signifying Magic. Dr. Hickes, and some who have coincided with him in sentiment, consider that the Runic character was borrowed from the Roman; though Wormius remarks, that they might with equal propriety be traced to the Hebrew or Greek, but their form, number, order, and names, shew that they are independent of all these, and history proves that they were known long before Christianity penetrated into the remoter regions of the North. The Runic characters considered as magical signs, were divided into several classes: thus, the Noxious, or Bitter Runes, are said to have been employed by the Goths to bring evils upon their enemies; the Favourable to avert misfortunes; and the Medicinal were inscribed upon the leaves of trees for healing. Some were used as a preservative against shipwreck, and others as antidotes against poison; and they were alike adopted to render a mistress favourable, or as protections against the resentment of enemies; in all which operations the difference consisted chiefly in the ceremonies observed in writing them, in the materials upon which they were written in the places where they were exposed, and in the manner in which the lines were drawn, whether like a serpent, a circle, or a triangle. But the Runic characters were also used for writing epistles and epitaphs, and in Blekingia, a Swedish province, there is a road cut through a rock which contains an inscription in Runic characters, that is said to have been engraven there by King Harold Hyldetand, in honour of his father, about the commencement of the seventh century. The more ancient these inscriptions are, the better they are sculptured, and they are rarely written from the right hand to the left, though it is not uncommon to meet with the characters carved in a perpendicular line, and reading either upwards or downwards; in which latter case the reader turns to the left hand, and reads upward until he arrives again at the top, when he proceeds a second time to the bottom. This resembles the ancient Greek manner of writing, called the

Boustrophedon, or ox ploughing, mentioned at page 423, ante. The greater number of the ancient Runic monuments now extant, are large fragments of rocks, bearing inscriptions, dispersed through the fields of Norway and Sweden; although they are sometimes to be found in churches and other buildings. There is also another species of Runic alphabet, somewhat varying from the above, but still consisting of sixteen letters, called *Runor*, which are to be found upon certain stone obelisks erected in Sweden to the memory of the dead, and of some of which, an account may be found in the *Philosophical Transactions*, for 1737-38, vol. xl. No. 445, art. iii. page 7. The peculiarity of this dialect, which, from the letters of it being found in Helsingland, is called the Helsingic, is, that the same character according to its place and attitude between two parallels, is indicative of different sounds. It is supposed that in the reign of the Emperor Gallienus, about the middle of the third century, that the ancient Goths were converted to Christianity by the Greek Priests, Ascholius, Bishop of Thessalonica, and Audius, who, it is also imagined, introduced their letters with their religion. The Runic language, on account of its magical uses, lay under the severest denunciations of the Christian Missionaries; and it is asserted, that Uphila, or Gulphila, a native of Cappadocia, and Bishop of the Goths in Mœsia, a country which lay to the South of the Danube, next the Black Sea, invented those characters called the Mœso-Gothic, after the Greek letters, and translated the Holy Scriptures into them and his own native language. In the tenth and eleventh centuries, the Runic gave way to the Roman character, and at length the Missionaries succeeded in wholly abolishing them, as they tended to preserve the people in their ancient superstitions. In the year 1001, Pope Sylvester II. and Sigfrid, a British Bishop, persuaded the people of Sweden to resign their use, and in 1116, they were condemned in Spain by the Council of Toledo. They were abolished in Denmark in the beginning of the fourteenth century, and in Iceland soon after. The use of the Runic character in England, did not last beyond an hundred years; for the Saxons, who were proud of tracing their descent from Woden, introduced his language and letters, when they became possessors of this Island in the fifth century, but in the sixth, when they were converted to Christianity, those characters were considered unhallowed and necromantic, and the common writing of them grew obsolete. A few monuments of their use, however, still remain; such as Danish and English medals, having their legends engraven in the Latin tongue, and the Runic letter; inscriptions cut upon stones, a coin struck by King Offa, and a few manuscripts. Further information upon the history and construction of the Runic language, may be found in

Antiquitates Danicæ, seu Litera Runica et Lexicon Runicum, by Olaus Wormius. Hafn. 1651. *Manuductio compendiosa ad Runographiam, Scandiam antiquam, recte intelligendam*, by Olaus Wormius. Upsal, 1676. Folio. *Lexicon Islandicum; sive Gothicæ-Runæ, vel Linguæ Septentrionalis Dictionarium*, by Gudmundus Andreas. Hafn. 1683. 4to *Linguarum Veterum Septentrionalium Thesaurus Grammatico-Criticus et Archæologicus*, by the Rev. George Hickes. Oxford. 1705. Folio. *De Runarum in Svecia Antiquitate, origine, occasu*, by J. Ihre, and U. Von Troil. Upsal. 1769-73. 4to. *Northern Antiquities*, translated from the French of Mons. P. H. Mallet. Lond. 1770. 2 vols. 8vo.

GOTHIC.

Bishop Ulphilas, after all the disputations on the subject, is allowed to have produced his Mœso-Gothic characters, the first properly denominated Gothic, at a period long subsequent to the first use of the Runic. This prelate who received his education in Greece, was held in great estimation by the Emperor Constantine the Great, who called him the Moses of his time; in the year 359 he assisted in the Council of Constantinople, and in 378 he was dispatched on an embassy to the Emperor Valens, to solicit a settlement for the Goths in Thrace, after they had been expelled by the Huns. To accomplish this purpose, he is said to have embraced Arianism; and to have propagated Arian doctrines in his own country. His translation of the entire Scriptures was made from the Greek text, although from its frequent coincidence with the Latin, it has been suspected of having been interpolated since his time from the Vulgate; but notwithstanding, its unquestionable antiquity and general fidelity, have procured for it a very high degree of estimation with Biblical critics. The celebrated copy of this translation however, has not descended to the present time in an entire state; and the only parts extant in print, are, the greater part of the four Gospels, and some fragments of St. Paul's Epistle to the Romans. The manuscript original, whence some of these extracts have been published, is called the *Codex Argenteus*; it contains the four Gospels according to the version of Ulphilas, and is preserved in the University of Upsal. It is written on vellum, and has received the name of *Argenteus* from its silver letters: it is of a 4to. size, and the vellum leaves are stained with a violet colour; and on this ground the letters, which are all *uncial* or capitals, were afterwards painted in silver, excepting the initial characters and a few other passages, which are in gold. From the deep impression of the strokes, Michaelis has conjectured that the letters were either imprinted with a warm iron, or cut with a graver, and afterwards coloured; but Mr. Coxe, after a very minute examination, was convinced that each letter was painted, and not formed in the

manner supposed by Michaelis. Most of the silver letters have become green by time, but the golden ones are still in good preservation. This Codex is mutilated in several places, but what remains, is for the most part perfectly legible. It was originally discovered in the year 1597, in the Library of the Benedictine Abbey of Werden in Westphalia, whence it was brought to Prague; and, at the capture of that City in 1648, was sent as a valuable present to Christina, Queen of Sweden. It subsequently came into the possession of Isaac Vossius, at whose decease it was bought by Count Magnus Gabriel de la Gardie for 250*l.* and was by him presented to the University of Upsal. Three editions of it have been printed. Concerning the age of this manuscript, there are two hypotheses; one is, that it is written in the language and character of the Mœso-Goths, the ancestors of the present Swedes, as they were used in the fourth century, and that it is a true copy of the ancient version of Ulphilas: this is supported by Junius, Stiernhelm, David Wilkins, Benzelius and Lye. Others on the contrary, assert that it is a translation in the Frankish idiom, copied in the reign of Childeric, between the years 564, and 587: and this is warmly defended by Hickes, La Croze, Wetstein and Michaelis. Of the remainder of Ulphilas' translation of the Scriptures, some fragments of the Gothic version of St. Paul's Epistle to the Romans were discovered by M. Knittel, in the year 1756, in a Codex Rescriptus belonging to the library of the Duke of Brunswick at Wolfenbüttel: they were published by him in 1762, and reprinted in 1763, in 4to. at Upsal, with notes by Ihre. The Brunswick manuscript contains the version of Ulphilas in one column, and a Latin translation in the other: it is on vellum, and is supposed to be of the sixth century. In the eighth or ninth century, the *Origenes Isidori Hispalensis* were written over the translation of Ulphilas; but the ink had become so exceedingly pale as not to admit of deciphering the original manuscript, without great difficulty. In the year 1817, a most important discovery was made among the Codices Rescripti, in the Ambrosian Library, by the Abate Angelo Maio, the present keeper of the Varican Library; of two voluminous manuscripts containing the Mœso-Gothic translation of the thirteen Epistles of Saint Paul, made by Ulphilas, the loss of which has hitherto been a subject of regret. These manuscripts are covered by Latin writing of a later date, and appear to have been written between the fifth and sixth century. What is wanting in one manuscript is contained in the other: and eight of the Epistles are entire in both, so as to afford the advantage of collation. The characters are stated to be large and handsome; the titles of the Epistles are at the head of the manuscripts; and there are also marginal references in the same language. Of this very important discovery Signor Maio has announc-

ed his design of publishing an extensive specimen in a preliminary dissertation: and a complete fount of Mæso-Gothic types has been cast, at the expense of a public-spirited individual, of different sizes, both for the text and notes. Besides the two manuscripts just noticed, the Abate Maio has collected twenty more pages in the Mæso-Gothic language, extracted from several other Codices Rescripti in the same library; in these pages are found those parts of Ulphilas' version of the Gospels, which are wanting in the mutilated editions of the Codex Argenteus, together with great part of the homilies or commentaries on them; and, what is still more interesting, some fragments of the Books of Ezra and Nehemiah: a discovery this, of the greatest importance, as not the smallest portion of the Gothic version of the Old Testament was hitherto known to exist. Farther particulars concerning this valuable version may be found in *Analecta Ulphiana, duabus comprehensa dissertationibus: prima, de Codice Argento et litteratura Gothica; altera, de Mœsogothorum nominibus, substantives, et adjectives*, by J. Ihre, Upsal. 1769. 4to. *Travels in Russia, Poland, and Sweden*, by Archdeacon Coxe. Lond. 1784-90. Quarto. Michaelis J. D. *Introduction to the New Testament*, translated with notes by H. Marsh. Lond. 1801-2. 8vo. 4 Vols. *Introduction to the Holy Scriptures*, by the Rev. T. H. Horne, vol. iv. already referred to, from which a large portion of the foregoing has been abstracted.

Olaus Magnus in his legendary History of the Northern Nations, states that the Goths wrote upon wood, upon the bark of trees, and sometimes upon skins made into sheets, with an ink prepared from coal finely pulverised with milk or water. An introduction to this language will be found prefixed to the *Dictionarium Saxonico et Gothico-Latinum*, by Edward Lye, and Owen Manning. Lond. 1772. 2 Vols. Folio. The Gothic, according to the hypothesis of Dr. Hickes, as it appears in the Preface to his *Institutiones Grammaticæ Anglo-Saxonicæ*, contained in his Thesaurus already referred to, is the original root of the old Saxon, or Anglo-Saxon; the Franco-Theotisc, and the Cimbric or old Icelandic. Out of these, from the Anglo-Saxon he deduces the English, Native Scots, Low Dutch, and the Frisic; whilst from the Frankic are derived the German dialects, and the Cimbric gave birth to the Icelandic, the Norwegian, the Danish and the Swedish. In treating therefore of some of these languages, this scheme shall be adopted in preference to our own given at the commencement of this article.

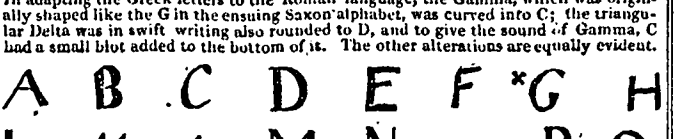
ANGLO-SAXON.

This forcible and ancient tongue, is properly speaking, the original English; as, it was the language used by our Saxon ancestors in Britain, when they arrived here from the Cimbric Peninsula and its vicinity, in the fifth and sixth cen-

furies, soon after the Romans had quitted it. As they advanced, their laws, language, manners, government, and rude customs, overspread that land, into which the late possessors had introduced somewhat of civilization and art. The name Saxon, originally signified upon the Continent, that of a single State; although it subsequently denoted an association of Nations; and Ptolemy mentions, that antecedent to A. D. 141, a people called Saxones, inhabited the territory now called Jutland, and three small islands at the mouth of the Elbe; at present denominated North-Strand, Busen, and Heiligland. Their derivation he considers to have been from that tribe of the Scythian people, which was called Sakai or Sacæ; and the word Sakai-suna, or the Sons of Sakai, to have been the etymon of their name. The Saxon tongue, as it was anciently spoken in Britain, is divided into three periods: namely, firstly the British Saxon, which extended from the entry of the Saxons on the invitation of Vortigern, A. D. 449, until the invasion of the Danes under Ivar in 867; secondly, the Danish Saxon, which extended from the Danish invasion till that by the Normans in 1066; and thirdly, the Norman Saxon, which commencing at the Norman accession, was very rude and irregular, and which continued until near the close of the twelfth century. After this period, the French tongue prevailed in England, and even so early as the year 652, the Anglo-Saxon youth were commonly sent to France for their education. The laws were also written and administered in Norman-French, until 1376, when King Edward III. in the fiftieth or jubilee year of his reign, granted as an especial favour, that judicial proceedings might pass in English, but that all acts should be enrolled in Latin. Several of the ancient charters however had been written in Anglo-Saxon, and that the knowledge of their liberties might not be lost, some of the British Monasteries, particularly those at Croyland and Tavistock, still taught the language. Of the pure Anglo-Saxon as it was spoken during the first period, there is but one fragment now extant, which occurs in King Alfred's version of the Venerable Bede's Ecclesiastical History. There are several specimens of the Danish Saxon still preserved, especially some translations of the Scriptures finely illuminated: and of the third, there are also many MSS. scattered through the kingdom. The antiquity of the Saxon tongue is by some authors carried to an extravagant excess; as they do not hesitate to declare that it was spoken in Paradise, and that from it are derived the names of the antediluvian Patriarchs. It was, however, more probably descended of the Teutonic of the upper dialect, which embraces most of those tongues, now known as the offspring of the Gothic.

Notwithstanding the probability of all this, Mr. Astle considers that the Saxons arrived in Britain wholly ignorant of letters; and that they adopted the Roman charac-

ters which they found in this island, which had already been barbarised from their original Italian form by the British Romans and Roman Britons. Dr. Whittaker, in his History of Manchester, Lond. 1775. 4to. Vol II. p. 329, also supports this argument against Humphrey Wanley and Dr. Hickes, who maintained that the Anglo-Saxon Alphabet arose out of the Gothic. Perhaps, however, an union of the two was really the original; and the letters which the Saxons formerly possessed in their own lands, were altered, amended, or improved by the Latin ones which they found in England. To shew their similarity, we have annexed a very ancient Roman Alphabet which was derived from the Ionian Greek letters, in consequence of which it still bears the name of Ionic. It was used about 714 years before the Birth of Christ; but those letters that are marked with a cross, are of modern addition. In adapting the Greek letters to the Roman language, the Gammfa, which was originally shaped like the G in the ensuing Saxon alphabet, was curved into C; the triangular Delta was in swift writing also rounded to D, and to give the sound of Gamma, C had a small blot added to the bottom of it. The other alterations are equally evident.



Thefe are twenty-four letters in the Anglo-Saxon alphabet which are formed nearly similar to the Roman letters of the present day, and have the same names and powers; but about the ninth century however, the small letters *f*, *g*, *r*, and *t*, lost their Saxon forms, and were written after the present Roman shape. The first Saxon types were cut by John Daye, under the patronage of Archbishop Parker, about the year 1567, for his editions of *Asserius Menevensis, Ælfric's Easter Homily, and the Saxon Gospels.* Astle prefers their shapes to any which have since been cast.

Modern Saxon Alphabet.

Anglo-Saxon Form		Modern Form.		Sound.	Anglo-Saxon Form.		Modern Form.		Sound.
A	a	A	a	Bar.	N	n	N	n	None.
B	b	B	b	Brand.	O	o	O	o	O.
C	c	C	c	Child.	P	p	P	p	Power.
D	ð	D	d	Down.	R	ɲ	R	r	Rend.
E	e	E	e	Hair.	S	ſ	S	s	Shoot.
F	f	F	f	Find.	T	t	T	t	Turn.
G	ȝ	G	g	Gem.	Ð	ð	Th	th	Thou.
H	h	H	h	Heavy.	U	u	U	u	Under.
I	i	I	i	Ionian.	W	p	W	w	Below Pool.
K	k	K	k	Kent.	X	x	X	x	X.
L	l	L	l	Land.	Y	ý	Y	y	Wye.
M	m	M	m	More.	Z	ż	Z	z	Zeal.

Æ | æ | Æ | æ

There are also many abbreviations almost peculiar to the Saxon tongue, on the principal of which we have already treated; but those at present in use are the following—

⁊ et, and. ꝥ thaet, that.

In the Saxon Chronicle, a small *g* with a dash above it, stands for *gear*, or *year*; *k* with a comma, is *kyuning*, or *kyng*; *l* scored through is put for *eel*, or *ele*; *b* with a similar mark is *biscop*, or *bishop*; and *cw* with a dash over the latter letter are put for *cwæth*, or *qwoth*. From this exhibition of the language, after a brief list of the best works introductory to its study, we proceed to mention two noble national memorials which are written in it.

The best Anglo-Saxon Grammars, independent of that by Hickes already mentioned, are the following—*Dictionarium Saxonico-Latino Anglicum: accessit Ælfrici Abbatis Grammatica Latino-Saxonica cum Glossario*, Edited by William Somner. Oxf. 1659. Folio. *Grammatica Anglo-Saxonica*,

extracted from Hickes's *Thesaurus*, By the Rev. Edw. Thwaites. Oxford: 1711. Octavo. *The Rudiments of Grammar for the English-Saxon Tongue*, By Elizabeth Elstob. Lond. 1715. 4to. *Grammatica Anglo-Saxonica*, By Francis Junius, Edited by Edw. Lye. Oxford. 1743. Folio. *A Dictionary* in two Vols. Folio, was also compiled by the latter, and published by the Rev. Owen Manning in 1772. Folio. 2 Vols. *The Elements of Anglo-Saxon Grammar*, by the Rev. J. Lisson. 1819. 12mo. But perhaps the best and the most interesting for learners, is that published in 1823, by the Rev. J. Bosworth, as it is conducted according to the genius of the Anglo-Saxon itself, and not according to that of the Latin, which was the case in nearly all of the former. There are also copious notes appended to the whole work; and it is preceded by a curious introduction concerning the origin and progress of Alphabetic writing, with fac-similes, &c. For the history of the Anglo-Saxon language with specimens of it at different periods, see *The History of Great Britain to the Accession of Edward VI.* by Robert Henry, D.D. Lond. 1771-93. 4to. 6 Vols. and *A History of the Anglo Saxons*, by Sharon Turner. Lond. 1799-1805. 8vo. 4 Vols.

The Anglo-Saxon manuscripts are adorned with a great variety of ornamented and illuminated capital initials; but Mr. Astle supposed, that writing was very little practised by the Britons previous to the coming of Saint Augustine, in the year 596; for although suppositious alphabets of the aboriginal Britons have been produced, yet there is not extant a single manuscript that is written in them. The Saxon writing, as it is usually denominated, is of five kinds; namely, first, *Roman Saxon*, which prevailed in England from the coming of St. Augustine, until the eighth century; and of this there is a beautiful manuscript of the four Gospels, preserved in the Royal Library in the British Museum, the second leaf of which is of a violet colour, containing many gold and silver letters. Manuscripts in the Roman Saxon character, are frequently written partly in uncial or initial letters, and partly in demi-uncial, interspersed with some small letters. The second class of Saxon writing, is the *Set Saxon*, which began to be used about the middle of the eighth century, and continued common until the same period in the ninth: but it was not wholly disused till the commencement of the tenth. In the manuscripts of this class, the square or cornered capitals are used in the titles of books, and the first letters are often converted into the figures of men or animals. Towards the latter end of the ninth century, as learning became diffused in England under the patronage of King Alfred, and as many more books were in consequence written, an expeditious, or free Saxon hand, which had appeared formerly only in a few charters of the latter part of the eighth century, came into general use: this, is the third species of manuscript Saxon, which Mr. Astle denominates *Running-hand Saxon*. In MSS. of this period, there are many contractions which render them exceedingly difficult to be read. In the ninth, tenth, and beginning of the

next century, many volumes were written in England in the fourth class of Saxon manuscript, or what is denominated *Mixed Saxon*; that *is* to say, partly in *Lombardic*, partly in Roman, and partly in Saxon characters. Early in the tenth century, the fifth kind of written Saxon, namely, the *Elegant Saxon*, was first used; and it was more beautiful, says Mr. Astle, than the writing either in France, Italy, or Germany, at the same time: it lasted until the Norman Invasion, but it was not wholly disused until the twelfth century. This subject the reader will find interestingly pursued and illustrated, in Astle's *Origin and Progress of Writing*: in *a Descriptive Catalogue of the Manuscripts in the Stowe Library*, by the Rev. Charles O'Connor, D.D. Buckingham. 1818-19. 4to. 2 vols.: in *the Elements of Anglo-Saxon Grammar*, by the Rev. J. Bosworth. Lond. 1823. 8vo.:—and in Professor Ingram's *Observations on the Manuscripts of the Saxon Chronicle*, prefixed to his new translation of that invaluable record, Lond. 1823, 4to.

One of the most important Manuscripts of the Anglo-Norman Saxons, is the celebrated record formerly called Liber de Wintonia, or the Winchester Book, from its place of custody; but now known by the name of the Domesday Book. Of several of the abbreviations peculiar to this ancient and noble survey, we have given an account, at page 250 ante, together with a specimen of its text, and a notice of the printed edition of it at page 258; but we now purpose giving a concise history of its original, a description of the autograph manuscripts of it, and another extract from the contents, to elucidate the manner in which it was originally compiled. The name of Dom-Boc, or Domesday Book, has most commonly been derived from the Saxon Dom, doom, or judgment; alluding by metaphor, to those books out of which the World shall be judged at the Last Day. But although its wonderful minuteness in the survey of British property, might have made this the original of its title, yet its Latin names do not support it, since they signify only, the Winchester Rolls, the Writings of the King's Treasury, the King's Book, the Judicial Book, the Assessment of England, &c. The design of the work was to serve as a register of the possessions of every English freeman, although it is still doubted whether it were done to record the names and divisions of England in imitation of the Winchester Roll of Ælfred; to ascertain what quantity of Military Service was owed by King William's chief tenants; to fix the homage due to the Sovereign; or to record by what tenure the various estates of Britain were held. The survey was, however, undertaken by the advice and consent of a great council of the Kingdom, which met immediately after the false rumour of the Danes' intended attack upon England, in the year 1085, as it is stated in the Saxon Chronicle; and it did not occupy long in execution, since all the historians who speak of it, vary but from the year 1083, until 1087. There is at the end of the second volume, a memorandum, stating that it was finished in 1086. The manner of performing this Survey was expeditious: certain Commissioners, called the King's Justiciaries, were appointed to travel throughout England, and to register—upon the oaths of the Sheriffs, the

Lords of each Manor, the Priests of every Church, the Stewards of every Hundred, the Bailiffs and Six Villeins, or Husbandmen of every Village, the Numbers of the various Places, the Inhabitants of them in the time of King Edward the Confessor, forty Years previous, the name of the then possessors, the quantity of land, the nature of the tenures, and the several kinds of property contained in them. All the estates were to be then strictly rated: viz. as they stood in the reign of the Confessor; as they were first bestowed by King William I., and as they were at time of the survey. This will be better understood by a reference to the following extract, which is interlined with an English translation:

Robt ten de ead fem . *Criz* . Boln tenuit T.R.E.7

Robert holds of the same woman, Creech, Boln held it in the time of King Edward, and

geldb̄p dim hida . Tra . ē . dim car̄ . q̄ ibi . ē cū . IIII

it was taxed for half a hide. There is land for half a plough, which is there with four

bord . 7 III . ac p̄ti . 7 VII . q̄z pasturnæ lig. 7 III. q̄z

borders and three acres of meadow, and pasture seven quarentines in length, and three quarentines

in lat. Valet . x. sol.

in breadth. The value is ten shillings. Vide Dorset, Vol. 1, page 84.* Col. 1.

The Domesday-book, was, until 1696, kept under three locks, the keys to which were in the custody of the Treasurer and the two Chamberlains of the Exchequer; but it is now deposited in the Chapter House at Westminster, where the fee for consulting it is 6s. 8d., and for transcripts from it, 4d. per line. The Manuscript itself consists of two volumes, a greater and a less. The first of these is a large folio, containing the description of thirty-one counties, upon 382 double pages of vellum, numbered on one side only, and written in a small but plain character, each page having a double column. Some of the capital letters, and principal passages, are touched with red ink, and others have red lines run through them, as if they were intended to be obliterated. The smaller volume is of a Quarto size, and is written upon 450 double pages of vellum; but in a single column, and in a very large and fair character: it contains three counties, and a part of two others. A perfect idea of the appearance of the Domesday

book, may be had on reference to the fac-similes engraved for the *Reports of the Commissioners of the Public Records*, whence the foregoing account has been abstracted; to *Registrum Honoris de Richmond*. Lond. 1722. Fol. Sign. B.: to *The History and Antiquities of the County of Leicester*, by John Nichols. London. 1723. Folio. Vol. I. part I. pp. xxx.xxxiii. To *Collections for the History of Worcestershire*, by the Rev. Treadway Nash, D. D. Lond. 1782. Folio. Vol. II. after p. clxviii: and to *The History and Antiquities of the County of Surrey*, by the Rev. Owen Manning, and William Bray. Lond. 1804. Folio. Vol. I. after p. cviii.

There are however other manuscripts known by the name of Domesday; as a third survey was also made by the order of William I., and a fourth is preserved in the Exchequer, which, although it be an abridgement of the former, consists of a very large volume. The Remembrancer's office in the Exchequer, likewise contains another copy of the fourth Domesday, which is adorned with several paintings and illuminated letters, referring to the reign of King Edward the Confessor, whence it has been erroneously supposed, that it was executed in his time. Alfred the Great is said to have had a Register, which has been lost since his period, which was known by the name of Dom-Boc; but although some historians have considered this as a survey of England, made when that Monarch is reported to have divided his kingdom into Counties, Hundreds, and Tythings, yet it was in reality only the Code of Anglo-Saxon laws; but the title of Dom-Boc being the most familiar to the English, and William's survey being considered as similar in contents, the popular name was transferred to it. There is preserved in the Archives of Exeter Cathedral, another Domesday book, usually called from that circumstance, the *Exon-Domesday*; which consists of a description of five counties in the Western parts of the kingdom, copied from the inquisitions made for King William's survey. Its size is a small Folio, having 532 double pages of vellum, the skins, or sheets of which, vary in number from one to twenty; as the lands of each of the more considerable tenants begin upon a new sheet, and those of almost every tenant upon a new page. A difference of hand-writing and a variation in the contractions, evince that different scribes must have been employed upon the several parts of the manuscript; and three leaves relating to the Hundreds of Witts, are in a character more minute, and upon smaller vellum than the rest of the work. The whole is now bound in one volume; but about the close of the fourteenth, or the beginning of the following century, the manuscript was made up in two volumes and paged, yet so erroneously, that the leaves containing the lands of the same tenants, were placed at different parts of the book. Other manuscripts called Domesday, or those of a similar nature, are the *Inquisitio Eliensis*, a Register of the property of the Monastery of Ely, preserved in the Cottonian Library in the British Museum; the *Winton Domesday*, a Survey made in the reign of King Henry I. to ascertain the demesnes of Edward the Confessor, in Winchester, preserved in the Archives of the Society of Antiquaries; and various copies of the *Boldon Book*, an Inquisition

into the rents and tenures due in the Bishopric of Durham, the name of which was derived from the village and parish of Boldon, near Sunderland, by whose inhabitants its contents were furnished. Authentic copies, and particular descriptions of all these will be found in *Libri Censualis vocati Domesday-book, additamenta ex Codice Antiquiss.* printed on the Record Commission. Lond. 1816. Folio. We now proceed to give a short account of the printing of these Records, inasmuch as they form an important epoch in the modern typographical history of England. The excellence and authority of the Domesday Survey, had been celebrated by many eminent authors, and a printed edition of it had long been considered as an Antiquarian desideratum; but it was not until the year 1767, when the House of Lords determined upon printing their Journals and Parliamentary Records, that its publication became strongly urged to their consideration, that in the event of any accident occurring to the original, so important a national register might not be entirely lost. In consequence of this petition the Treasury Board referred the affair to the Society of Antiquaries, as to the means through which it should be published; whether by printing types, or by having a copy of the MSS. engraven in fac-simile. By the examination of several eminent printers, it was learned that according to the first plan, very many unavoidable errors would occur; and a tracing of the record was then proposed to be transferred to copper-plates. An estimate of the expense of this was next ordered by the Treasury Board, which amounted to £20,000, for the engraving and printing of 1250 copies, each containing 1664 plates; but this sum, however proportionally moderate, was considered too large, and the first plan was again reverted to. It was then proposed by the learned Dr. Morton, that a fount of fac-simile types should be cut under his superintendance, but this scheme was also abandoned, on account of the letters in the MSS. continually varying in their forms. Notwithstanding this objection, however, there is in *The History of the Origin and Progress of Printing*, by Philip Luckombe, Lond. 1770, 8vo, p. 174, a specimen of Domesday type cut by Mr. Tho. Cottrell, the Letter Founder, but the fac simile is unfaithful, and the extract very corrupt. When Dr. Morton's plan was resigned, the publication of Domesday was entrusted to Abraham Farley, Esq. F. R. S. a gentleman of great record learning, and who had access to the ancient manuscripts for upwards of forty years. His knowledge, however, did not induce him to differ from his original in a single instance, even when he found an apparent error: he preserved in his transcript every interlineation and contraction, and his copy was then placed in the hands of John Nichols, Esq. F. A. S. &c and was finished in 1783, in two volumes, Folio, with the types of which we have shewn specimens, devised by himself, and cut by Mr. Joseph Jackson.

Another Anglo-Saxon record, which in national importance may almost claim an equality with the Domesday-book, is the celebrated Saxon Chronicle, of which we shall give an account and specimen, abstracted from the elegant new translation of that work, by the Rev. J. Ingram, already referred to. The

Saxon Chronicle, or as it might be more properly denominated from the extensive nature of its contents, the Saxon Annals, is an original and authentic record of the most important transactions of our Saxon ancestors, from their first arrival in Britain down to the year 11 4; but the register commences with an introduction containing a memoranda of the great events and periods from A. D. 1, compiled from various sources. It opens with the following account of England, which by the kindness of Mr. Richard Taylor, we present to the reader printed with the same elegant Anglo-Saxon types, as those which executed the beautiful edition of the Chronicle already mentioned, and the interesting Grammar of the Rev. J. Bosworth.

BRYTENE ıȝlanð ıȝ ehta hunð mila lanȝ. ⁊ tpa hunð mila bȝáð. Anð heȝ ȝýnðon on þam ıȝlande ȝıȝ ȝeðeoðu. Ængliȝc. ⁊ Bȝýt-pýliȝc. ⁊ Scýttiȝc. ⁊ Pýhttiȝc. ⁊ Boclæðen.

TRANSLATION.

"*The island Britain is eight hundred miles long, & two hundred miles broad. And there are in the island five nations: English, & British, (Welsh,) & Scottish, & Pictish, & Latin.*"

The names of the Writers of these Annals can be little more than conjectured; but Professor Ingram appears to imagine that the Kent and Wessex Chronicles, might have been commenced under the direction of the Archbishops of Canterbury, or perhaps beneath the superintendance of Archbishop Plegmund, until his decease in 923; whilst he also seems to conceive it not impossible that King Alfred himself might have written the genealogy of the West-Saxon Kings, and a separate Chronicle of Wessex. From their time, he considers, until a few years subsequent to the Norman Invasion, the Saxon Annals were carried on by various hands under the patronage of such characters as Archbishops Dunstan, Ælfric, &c. down to the election of William de Waltville to be Abbot of Peterborough, in A. D. 1154. There are several authentic Manuscript copies of the Saxon Chronicle, which are preserved in the British Museum, the Bodleian, and the Dublin Libraries, and one of great authority, written about the eighth or ninth century, which is kept at Corpus Christi College, Cambridge. Of all these, a particular description, with fac-similes, will be found in Professor Ingram's translation of the Saxon Annals, pp xix. xxiv. where also farther references, upon this particular, subject are given.

The Anglo-Saxons do not appear to have possessed any native versions of the Scriptures, until the eighth century; when about the year 760, Adhelm, the first Bishop of Sherborn, translated the Psalter into Saxon, and soon after, Egbert or Eadfrid, Bishop of Lindisfarne, produced a version of the four Gospels, a MS copy of which is now in the Cottonian Library in the British Museum. Some years subsequent, Venerable Bede translated the whole Bible into Saxon; and several portions of the Scriptures, as well as entire versions of them were executed after his time. Thus, King Alfred had translated about half the book of Psalms when he died in the year 900; and *Elfric*, Archbishop of Canterbury in 995, put the Pentateuch, Joshua, Judith, a part of the book of Kings, Esther, and Maccabees, into Anglo-Saxon; and it is probable that all these were made from the old Latin. The Anglo-Saxon Bible has never yet been printed entire, but King Alfred's version of the Psalms, with a Latin text interlined, was published by John Spelman in 1640; and the Four Gospels have been thrice printed.

ENGLISH.

The history of our own tongue is related in those of the Gothic nations, since with them for the foundation and with words derived from numerous other dialects, the present language is constructed. Previous to the entry of the Anglo-Saxons, the speech of Britain is supposed to have been the Gaelic, which very much resembled the language of France at that period; and of which only corrupted fragments remain in the Gaelic or Erse tongue, the Irish, and the Welsh. When Britain became a Roman province, its laws and public edicts were written in the Latin; but as there had been at all periods but a limited resort of Romans hither, as this country was not entirely reduced until about the middle of the fourth century, and as the Imperial Legions were recalled to defend their own land soon afterwards, their language never made the progress here which it did in Lombardy, Spain and France. Of the calling in of the Saxons by Prince Vortigern, to oppose the Scots and Picts we have already spoken; for their services they were rewarded with the Isle of Thanet, but as they grew powerful they became discontented, and dispossessing the inhabitants of all the country to the East of the Severn, they spread the Saxon language throughout England. We have also treated of the changes and decline of the Anglo-Saxon tongue, its mixture with the Norman French, and have exhibited its ancient Roman and Gothic characters; it now remains only to be added that the English letters used for printing, were originally of the Black, or Gothic form, the change of which for the Roman and Italic, we have already detailed at pp. 2, 10 of the present volume. For ornamental works, however, and for reprints of ancient books, the Black character is still occasionally used; but the modern shape of it no longer retains the manuscript form which it originally bore when it

was intended to appear as the hand-writing of some conventual scribe. The Modern Black, as it is termed, is a fat-faced full-bodied letter, in which the Roman Capital is conjoined with the Gothic Text.

ANCIENT BLACK.				MODERN BLACK			
A.	A.	a.	a.	A.	A.	a.	a.
B.	B.	b.	b.	B.	B.	b.	b.
C.	C.	c.	c.	C.	C.	c.	c.
D.	D.	d.	d.	D.	D.	d.	d.
E.	E.	e.	e.	E.	E.	e.	e.
F.	F.	f.	f.	F.	F.	f.	f.
G.	G.	g.	g.	G.	G.	g.	g.
H.	H.	h.	h.	H.	H.	h.	h.
I.	I.	i.	i.	I.	I.	i.	i.
J.	J.	j.	j.	J.	J.	j.	j.
K.	K.	k.	k.	K.	K.	k.	k.
L.	L.	l.	l.	L.	L.	l.	l.
M.	M.	m.	m.	M.	M.	m.	m.
N.	N.	n.	n.	N.	N.	n.	n.
O.	O.	o.	o.	O.	O.	o.	o.
P.	P.	p.	p.	P.	P.	p.	p.
Q.	Q.	q.	q.	Q.	Q.	q.	q.
R.	R.	r.	r.	R.	R.	r.	r.
S.	S.	s.	s.	S.	S.	s.	s.
T.	T.	t.	t.	T.	T.	t.	t.
U.	U.	u.	u.	U.	U.	u.	u.
V.	V.	v.	v.	V.	V.	v.	v.
W.	W.	w.	w.	W.	W.	w.	w.
X.	X.	x.	x.	X.	X.	x.	x.
Y.	Y.	y.	y.	Y.	Y.	y.	y.
Z.	Z.	z.	z.	Z.	Z.	z.	z.

Christianity is said to have been introduced into Britain by some Disciples of St. Philip, about the year 60; but there is not any proof of the English possessing any part of the Scriptures, before the Anglo-Saxon Versions already mentioned. The first translation of them into the English tongue, which is now known, was about 1290, by an anonymous author; but there are three manuscripts of this Version now extant. In 1380, the celebrated John Wickliffe translated the whole Bible, from the Latin Vulgate, into the English of his own time; and in 1429, manuscript copies of his New Testament were sold for four marks and forty pence, 2*l.* 16*s.* 8*d.* of the present currency, or about 20*l.* calculating the difference of the value of money; thus rendering it a volume, which only the wealthy could ever hope of procuring. Of this New Testament, an elegant printed edition with an historical and biographical introduction, has been published by the Rev. H. H. Baber, Lond. 1810, Quarto. A violent opposition followed the Christian labours of Wickliffe, through all of which he was supported by the powerful and excellent Duke of Lancaster; but in 1408, a Convocation held at Oxford under Archbishop Arundel, decreed that there should not be any future translation of the Scriptures, and that none should read the books of Wickliffe; in consequence of this constitution, several persons were put to death for reading of the Scriptures in English. In 1526, appeared the first printed translation of the English Bible, in Octavo, which was published anonymously in Belgium; but the supporters of it were William Tindal, John Frith, and William Roye, who re-translated it from the Greek Version. The copies which were sent to England were speedily bought up and destroyed, but before 1530, numerous other editions appeared in Holland. It was not until 1535, that a printed translation appeared, allowed of by the royal authority; but in that year Miles Coverdale published a Folio Bible, under the sanction of King Henry VIII., and in 1536, the excellent Lord Cromwell, a great patron of the Reformation, issued injunctions for its dispersion and general use throughout the realm. Farther information on this subject, which now becomes involved with the History of Printing, will be found in the Rev. T. H. Horne's *Introduction to the Scriptures*, Vol. II. p. 240, and in *A Complete History of the several Translations of the Holy Bible and Testament into English*, by the Rev. John Lewis. Lond. 1818. Octavo. The history of the English language in general will be illustrated by the following works: *A Dictionary of the English Language: with a History and Grammar of the same*, by Samuel Johnson. Lond. 1755. Fol. 2 Vols. Vide also the Edit. by the Rev. H. J. Todd. Lond. 1818. 4to. 4 Vols. *History of English Poetry*, by Tho. Warton. Lond. 1775-81-1806. Quarto. 3 Vols. *An Introduction to* [*Dr. Lowth's English Grammar*, by John Ash, LL. D. Lond. 1760, 12mo.

An Introduction to the English Grammar, by Robert Lowth. Lond. 1804. 12mo. *The History of Great Britain*, by James Petit Andrews, F. S. A. Lond. 1794. 4to. 2 Vols. *Essay on the Language and Versification of Chaucer, prefixed to the Edit. of the Canterbury Tales*, by Thomas Tyrwhitt, F. R. S. Oxf. 1798. 4to. Vol. 1. *Diversions of Purley*, by John Horne Tooke. Lond. 1798-1805. 4to. 2 Vols. *The Philological Works of James Harris*. Lond. 1803. 8vo. 5 Vols. *Works of Thomas Sheridan, M. A.*

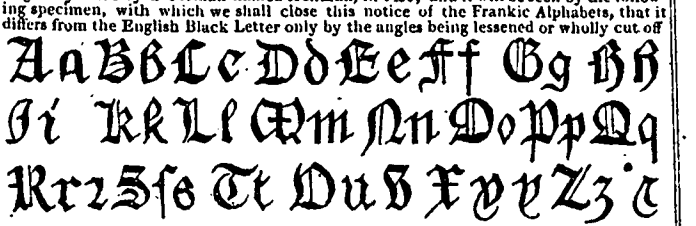
FRANKIC.

About the reign of the Emperor Valerian, A. D. 254, that ancient Roman valour and discipline, which had so long maintained the quiet possession of Gaul, after its final conquest in the time of Julius Cæsar, began to decline, and the German nations, which had never been wholly subdued, made more frequent and more successful attacks upon France, than they had ever previously effected. One of these nations was composed of a people, whose ancestors are said to have escaped from the destruction of Troy, and who resided with the Saxons upon the banks of the Rhine, called Franks; because it is supposed, that the inhabitants of the Lower Rhine and of the Weser, about the time of the Emperor Gordian, A. D. 236, entered into a confederacy, and assumed the name of Franks, or Freemen. Valesius states, that upon their first irruption into Gaul, in A. D. 254, they were but few in number, and were repulsed by Aurelian, the subsequent Emperor; but two years after they made a second attack, and were again defeated by the Co-Emperor Gallienus; and that at length they poured into Gaul in such numbers, that Gallienus, no longer able to resist them, entered into a treaty with some of their Chiefs, to defend the country against all its various enemies. The defeat and captivity of Valerian in Persia, A. D. 260, caused the Franks again to enter France, and that with such success, that they could not be driven thence for fifteen years afterwards; when the Emperor Probus totally defeated them in Spain, pursued them even to their own country, and there erected several forts to keep them in subjection. Nine of the Frankic kings then promised annual tribute to the Emperor, which was paid until the year 287, when, with the assistance of the Saxon pirates, they again visited the coasts of Gaul, and brought away very considerable spoils. The Emperor Maximian entered the country of the Franks in the following year, and reduced two of their kings; whilst to such of the nation as were willing to reside in Gaul, he allotted certain lands in the vicinity of Treves and Cambray. About A. D. 293, the Franks possessed themselves of Batavia and part of Flanders, but those places they were forced to surrender to Constantius, the father of the Emperor Constantine the Great, by whom

they were transplanted to Gaul. By the year 355, the irresistible spirit of the Franks had triumphed over forty cities in Gaul; and although the Emperors Julian and Theodosius both defeated them, yet in 388, they cut off a whole Roman army which was sent out against them, and until the war with Attius, they were harassed more by their fellow-barbarians than by the Roman Legions. Pharamond, the first of the Frankic kings, of whom there is any distinct or authentic history, was reigning when this war brake out; and the period in which he lived, was from the year 417 or 418, until 428, when Archbishop Usher supposes that he was slain in battle. He is said to have been the principal compiler of the famous Salique Law, and to have been assisted by four sages, called Wisegast, Losegast, Widegast, and Solegast. Others, however, have supposed that the Franks were without any written Laws until the time of Clovis, A. D. 487, when the French Monarchy was established, and the Roman power in Italy was entirely destroyed. Such was the origin and early progress of the Franks, and the alphabetic characters which they used in Gaul, were derived firstly from the Gothic letters that had been familiar to them in their own country, and secondly from the Roman ones that were already naturalized in France. These were ultimately united and mixed with the Lombardic, or Visigothic, and the Saxon characters. About the fifth century, Thoulouse became the chief seat of the Western-Goths; and the Visigothic letters, a mixture of Roman and Spanish Gothic prevailed in France.

called Franco-Gallic, or Merovingian, being first practised under Merovæus, the third king of the Franks from Pharamond, who died in 458; it prevailed until the commencement of the 9th century. The first great revolution in the Frankic writing is usually attributed to Charlemagne; by whom, it is said, that several alphabets were invented in the 9th century, and which are denominated after him the Caroline. The Abbé Velley, however, in his Hist. de France, Tom. i. p. 53, states of this monarch, that although he was one of the most learned men of his age, he could not write; and that when he issued the instrument by which the Romish Liturgy was ordained through France, he confirmed it by making his mark; to which Mezerai adds, that below the figure was commonly inserted "I have signed it with the pomel of my sword, and I promise to maintain it with the point." In the 9th century, the Caroline writing having greatly degenerated, was restored about 987 by Hugh Capet, from whom it received the name of the Capetian, but in the 12th century, it began to decline, and in the following one it wholly disappeared, or was lost in the Modern Gothic. In the 14th and 15th centuries a set character, denominated French Bastard Letters, greatly resembling the Letters de Forme was in common use throughout France. It was originally made by a German named Heilman, in 1490; and it will be seen by the following specimen, with which we shall close this notice of the Frankic Alphabets, that it differs from the English Black Letter only by the angles being lessened or wholly cut off

The foregoing Alphabet, which is cited by Duret in his *Histoire de l'Origine des Langues de ces Univers*, p. 267, is given on the authority of the Abbé Trithemé; and a mixture of Gothic, Greek, and Saxon, may be observed in its characters. It is farther related, that in these letters one Vanethal, wrote a history of the Frankic conquests, comprising a period of 758 years. This species of writing is also



Additional information upon the subject of this language, may be found in *Glossarium, &c. ad Caroli-Magni, & Ludovici Pii Capituli*, by Pet. Pithœus, Paris, 1630, 8vo. *Tresor des recherches et Antiquitez Gaulois et Françoises*, by P. Borel, 1655, 4to. *Les Origines de la Langue Françoise*, by G. Menage, Paris, 1650, 4to. *Essai sur les langues en général, sur la langue Françoise en particulier, et au progression depuis Charlemagne jusqu'à present*, by M. Sablier, Paris, 1777, 8vo.

TEUTONIC AND GERMAN.

Until very recently, the modern Gothic character was not wholly disused, inasmuch as it was retained for the printed books of this language, although somewhat altered in a way peculiar to the German nation. The term of Modern Gothic, however, does not always apply to the descent of the black letters, but to the barbarity of their shape; as the writing which is known by that name, spread itself over Europe in the twelfth and thirteenth centuries, and took its rise in the decline of the arts, from the indolence of the conventual scribes and schoolmen. It consists of a degenerate form of the Latin writing, and it lasted in general, until the restoration of the arts in the fifteenth century, but much longer in Germany and the Northern nations. The ancient language of Germany was called the Teutonic, and many consider it to have been one of the original tongues of the world. In its present state it is parted into two grand divisions, the upper and the lower; of which the former embraces two principal dialects, namely, firstly, the Scandinavian, Danish, or perhaps Gothic, to which belong the languages spoken in Denmark, Norway, Sweden, and Iceland; and, secondly, the Saxon, of which the English, Scots, Frisian, and the other languages, to the north of the Elbe, are derivatives. The Lower Teutonic dialect comprises the Low Dutch, Flemish, and the other provincial tongues peculiar to the Netherlands. The Teutonic tongues thus extend from the boundaries of Lapland and Finland, to the verge of France and Italy. The similarity of the Teutonic to other languages is particularly striking; since, in the middle ages, the German and English Missionaries who travelled to Sweden, Denmark, and Norway, were readily understood in each of those countries. Ihre, whose works on Gothic Literature have been already referred to, mentions a striking similarity between the Old Teutonic and the Persian languages, and its conformity to the Greek is also remarkable.

That dialect which is known by the name of Low German or Low Dutch, is at the present period confined to the vulgar in Pomerania, the kingdom of Westphalia, and the Duchies of Mecklingburgh and Holstein; it bears a great resemblance to the Dutch. The High German, or High

Dutch is remarkable for its strength and richness; and it is spoken in the greatest purity in Upper, and a part of Lower Saxony, and upon the banks of the Necker and the Mayne. There are twenty-six letters in the German alphabet, the names, powers, and sounds of which are as follow:

The German Alphabet.

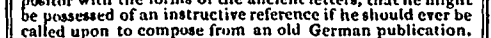
Name.	Figure.		Power.		Sound.	Name.	Figure.		Power.		Sound.
Ah	𝔄	𝔞	A	a	*Ah!*	En	𝔑	𝔫	N	n	*None.*
Bay	𝔅	𝔟	B	b	*Bale.*	O	𝔒	𝔬	O	o	*Robe.*
Tsay	𝔈	𝔠	C	c	*Fits.*	Pay	𝔓	𝔭	P	p	*Pale.*
Day	𝔇	𝔡	D	d	*Date.*	Koo	𝔔	𝔮	Q	q	*Cool.*
A	𝔈	𝔢	E	e	*Fate.*	Er	𝔎	𝔯	R	r	*Ardent.*
Ef	𝔉	𝔣	F	f	*Free.*	Ess	𝔖	𝔰	S	s	*Save.*
Ghay	𝔊	𝔤	G	g	*Gold.*	Tay	𝔗	𝔱	T	t	*Tame.*
Hah	𝔎	𝔥	H	h	*Hand.*	Oo	𝔘	𝔲	U	u	*Mood.*
Ee	𝔍	𝔦	I	i	*Field.*	Fow	𝔙	𝔳	V	v	*Favour.*
Yot	—	𝔧	—	j	*You.*	Vay	𝔚	𝔴	W	w	*Wine.*
Kah	𝔎	𝔨	K	k	*Kind.*	Iks	𝔛	𝔵	X	x	*Expend.*
El	𝔏	𝔩	L	l	*Life.*	Ipsilon	𝔜	𝔶	Y	y	*Pine.*
Em	𝔐	𝔪	M	m	*Mine.*	Tset	𝔝	𝔷	Z	z	*Fitz.*

The German language has also certain compound consonants and diphthongs, which are usually cast in type as one character; and which are of the ensuing forms and powers:

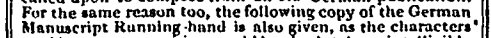
Figure	Pow.	Sound.	Figure.	Power.	Sound.
𝔄̈	Æ æ	*Air.*	𝔒̈	œ	{ *Jeune.* *Bird.*
𝔠𝔥	Ch	{ *Character.* *Sex.*	𝔰𝔦	si	
𝔠𝔨	Ck	*Bakken.*	𝔰𝔰	ss	
𝔣𝔣	ff		𝔰𝔱	st	
𝔣𝔦	fi		𝔰𝔰𝔦	ssi	
𝔣𝔣	ffi		ß	sz	
𝔣𝔩	fl		ᵹ	tz	*Tateztet.*
𝔩𝔩	ll		ø 𝔲̊	ue	*Waning.*

The Black Gothic character in Germany, is now almost superseded by the Roman for the purposes of printing; but it was nevertheless considered prudent to furnish the compositor with the forms of the ancient letters, that he might be possessed of an instructive reference if he should ever be called upon to compose from an old German publication. For the same reason too, the following copy of the German Manuscript Running-hand is also given, as the characters used in common writing would be absolutely unintelligible to an English printer, without such an assistant.

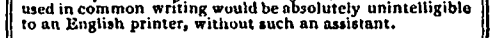
CAPITALS.



A B C D E F G



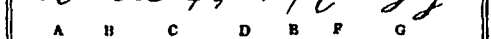
H I J K L M N O P Q



Q R S T U V W X Y Z

SMALL LETTERS.

a b c d e f g h i k



k l m n o p q r s

s t u v w x y z

Farther information on the history of the German language, will be found in those works already referred to concerning the Gothic; and a list of the best elementary works in Messrs. Boosey's Catalogue of Foreign Grammars, Dictionaries, &c. Lond. 1822. 8vo.

CELTIC LANGUAGES.

WELSH.

THE descendants of the ancient Celts were the aboriginal inhabitants of Gaul and Britain; but the name more properly belonged to certain of the Gauls, who resided in a district situate between the Seine, the Marne, and the Garonne, which was denominated Gallia Celtica. The Celts and Scythians were both descended from Gomer, the eldest son of Japhet, who, as some as have assumed, was the eldest son of Noah; and of their early settlement in Europe, we have already given some notice at page 448, ante. The generations of Gomer, were soon divided into several nations, bearing peculiar names; as the Gomro or Cymro, the Issue of Gomer; the Galatians or Gauls, so called from the redness of their hair; and the Celtes, which name is supposed to have been taken from the Greek word Keletai, used by Homer and Pindar to signify Horsemen. Cluverius makes the Celtic nation to comprise the regions of Illyria, Germany, Gallia, Spain, and the Britannic and other Northern Isles; and he states that they all spake the same language. A host of historians might be quoted to prove that this was the Gomeraeg, or Language of Gomer, which is almost the same as that still preserved by the Welsh; but which, from its extent, became parted into a great variety of dialects, each bearing the indubitable marks of its descent. That the Gomeraeg still retains the Hebrew tongue in very astonishing purity, may be seen in Charles Edwards' very learned publication, entitled, *Hebraismorum Cambro-Britannicorum Specimen.* Oxf. 1675. 4to.; where may be seen a considerable number of phrases taken out of the Old Testament Hebrew, opposed to those in the Welsh tongue, and the likeness is so strong, that it is evident they were once the same, varied only by the accidents of time and place. These and other particulars however, the reader will find discussed more extensively in *Parallellismus et convenientiæ duodecim linguarum ex matrice Schyto-Celtica Europæ.* Wittemb. 1697. 4to. *Antiquites de la Nation et de la langue des Celtes,* by P. Pezron. Par. 1703. 8vo. *Archæologia Britannica,* by Edw. Lhuyd. Oxf. 1707. Fol. *An Essay towards a British Etymologicon,* by Dr. Parry. Oxf. 1707. Folio. *Literator Celta,* by V. E. Loescherus. Leips. 1726. 8vo. *Memoire sur la langue Celtique,* by M. Bullet. Besançon. 1754-60. Fol. 3 Vols. See also the authorities cited in *The Universal History,* ancient part, vol. vi. pp. 6, 7, 30: and for initiatory works for the different branches of the Celtic tongue, vide that article in *Marsden's Catalogue of Grammars, &c.* already referred to. The primitive letters of the Welsh, says Dr. Fry, *Pant.* p. 805, formed an alphabet of sixteen radical characters and powers, and twenty-four secondary ones: and it was anciently known under the name

of Coelbren y Beirz, the Billet of Signs of the Bards, or the Bardic Alphabet. Their original manner of writing was by cutting the letters with a knife upon sticks, which were most commonly squared, and sometimes formed into three sides; consequently, a single stick contained either 4 or 3 lines. Thus in Ezek. xxxvii. 16. "Moreover, thou son of man, take thee one stick, and write upon it, For Judah, and for the children of Israel his companions: then take another stick, and write upon it, For Joseph, the stick of Ephraim, and for all the house of Israel his companions." The squares were used for general subjects, and for stanzas of four lines in poetry; the trilateral ones were adapted to triades, and for a peculiar kind of ancient metre, called *Triban* and *Englyn Milwyr*, or triplet, and the Warrior's Verse. Several sticks, with writing upon them, were put together, forming a kind of frame, which was called *Peithynen*, or *Elucidator*; and was so constructed, that each stick might be turned for the facility of reading: the end of each running out alternately on both sides of the frame. See also the introductory chapters to *A Dictionary of the Welsh Language explained in English*, by W. Owen, F.A.S. Lond. 1803. 8vo. 2 Vols.

GAELIC.

The Gaelic, or Erse tongue, is the name of that dialect of the ancient Celtic, which is spoken in the Scottish Highlands; and of the derivation of the word Gaelic, Gealic, Gallic, or Gaulic, we have already spoken. As a language, it possesses but two genders; and its nouns are like those of the Hebrew, varied by their prefixes, and not by their terminations. Of the old alphabet no traces remain, but Mr. Astle has engraven specimens from several Gaelic manuscripts, from the ninth or tenth century down to the fifteenth, which are written in the Anglo-Saxon characters of the various periods. Notwithstanding the acknowledged antiquity of the Gaelic, the translation of the Scriptures into it is but a recent work; yet the language is far from being on the decline, as it is regularly taught and frequently spoken even in the metropolis of England. Two excellent works on this dialect of the Celtic, are *An Analysis of the Galic language*. Edin. 1778. 8vo., and *A Galic and English Dictionary*. Lond, 1780. 2Vols. 4to. both by W. Shaw.

IRISH.

General Vallancy, in his *Grammar of the Irish tongue*, Dublin. 1782. 8vo. considers this speech to have been a Punic-Celtic compound; and that Ireland was once inhabited by a colony of Scythians, which had originally emigrated from the borders of the Euxine and Caspian Seas to Spain; that they were instructed in the letters and arts of the Phœnicians, and that finally they settled in Ireland, about 1000, or perhaps only 600 years B. C., carrying with them their

own elementary characters. As the ancient Irish alphabet, however, differs from that of any other nation, the General farther supposes, that it might have been derived from a colony of the Carthaginians, which also settled in their country, about six hundred years previous to the Birth of Christ. Some of the native Irish historians have adopted hypotheses concerning the origin of their nation, language, and letters, which are extravagant in the extreme. Thus the antiquity of the former has been endeavoured to be magnified by a quotation from a volume, entitled *Leabhuir Dromnasnachta, or the Book with the White Cover*; which states, that the three daughters of Cain took possession of Ireland, and that the eldest, who was called Bamba, gave her name to it. Dr. Parsons in his *Remains of Japhet*. Lond. 1767. 4to., relates that Ireland was inhabited about three hundred years after the Flood; and Dr. Keating, in his *General History of Ireland*. Lond. 1738. Folio, makes one Partholanus, a Giant, who had descended in a right-line from Japhet, to have first landed on the coast of Munster, on May the 14th, in the year of the World 1978. Concerning the language, equally improbable legends have been brought forward; for some have written that Fenius Farsaidh, or Finiusa Farsa, a great grandson of Japhet, established a school on the plain of Shinar, where he invented the Hebrew, Greek, Latin, and Irish characters. More of these wild traditions will be found in the Authors already referred to, and in *Ogygia: seu Rerum Hibernicarum Chronologia*, by R. O'Flaherty. Lond. 1685. Fol. and *A History of Ireland*, by S. O'Halloran. Dublin. 1803. 8vo. 3 Vols.

In speaking of Irish manuscripts, Dr. Keating states, that the Psalter of Tara was written about 972 years before the Birth of Christ; and there is an ancient alphabet, called an Irish one, now extant, which is said to have derived its title of Babeloth, from the names of certain persons who assisted in forming the Japhetian language. Mr. Astle, however, following Dr. Whittaker, asserts that all the Irish characters were of Roman origin, derived either from Britain, or from the Northern nations; and he also states, that he never met with an Irish manuscript of a greater age than the tenth century. To prove that the inhabitants of Ireland in this manner received their letters, he adduces their stone monuments, their coins, their manuscripts, and the works of their Historians; and all these arrive at the same conclusion. Such monuments as bore inscriptions, even the most ancient, were marked with letters which were evidently of Roman, and Roman-British formation; added to which, there were none of such great antiquity, as to have been engraven before the intercourse of the Irish with the British. They prove, however, the use of letters previous to the arrival of St. Patrick in Hibernia, A. D. 430; but the Caledonians, who also used the Roman

letters, had probably imparted them by that easy intercourse which they could carry on with Ireland, between Port Patrick and Carrickfergus. Sir James Ware, in his *Works concerning Ireland*. Dublin. 1764. 2 Vols. Fol. remarks, that there were not any coins struck in that country, excepting those by the Saxon and Danish Kings, until the twelfth century; previous to which, he proves from the Annals of Ulster, that gold and silver were paid and reckoned by weight. The forms of the native Irish letters, however, as used at the present time, may be seen in the following specimen, and they bear evidence in themselves of their British original; but, says Mr. Innes, in his *Essay on the Antiquities of Scotland and Ireland*, the Beth-Louis-Nion, or Alphabet of the Irish, is nothing but an invention of the Seanachies; who, since they received the use of letters, put the Latin Alphabet into a new arbitrary order, and assigned to each character the name of some tree.

Figure.				Name.	Pronunciation.	Derivation
𝔄	𝔞	A	a	𝔄𝔩𝔪 ...	nw ..'....	the fir tree
𝔅	𝔟	B	b	𝔅𝔢𝔦𝔱	beh	a birch tree
𝔈	c	C	c	𝔈𝔬𝔩𝔩 ...	k.....	an hazel tree
𝔇	𝔡	D	d	𝔇𝔲𝔦𝔭	deh	an oak tree
𝔈	e	E	e	𝔈𝔞𝔡𝔞 ...	e French .	an aspen tree
𝔉	𝔣	F	f	𝔉𝔢𝔞𝔭𝔞𝔫𝔫	ef.....	an alder tree
𝔊	𝔤	G	g	𝔊𝔬𝔫𝔱 ...	y gamma ..	an ivy plant
𝔍	𝔧	I	i	𝔍𝔬𝔷𝔞	i French ..	the yew tree
𝔏	l	L	l	𝔏𝔲𝔦𝔭 ...	l.....	a quickset tree
𝔐	𝔪	M	m	𝔐𝔲𝔦𝔫 ...	m.....	a vine plant
𝔑	𝔫	N	n	𝔑𝔲𝔦𝔫 ...	n.....	an ash tree
𝔒	o	O	o	𝔒𝔦𝔭	o....'....	the broom tree
𝔓	𝔭	P	p	𝔓𝔢𝔦𝔱 ...	peh.....	
𝔎	𝔯	R	r	𝔎𝔲𝔦𝔯	r.....	an elder tree
𝔖	𝔰	S	s	𝔖𝔲𝔩	sh	the willow tree
𝔗	𝔱	S	s	𝔗𝔢𝔦𝔫𝔢 ..	teh	the furze shrub
𝔘	u	U	u	𝔘𝔫	oo English	the heath shrub
𝔥	𝔥	H	h	𝔐𝔞𝔱	h.....	the white thorn

The Ancients also used the following in their alphabet.

Figure.		Name.	Derivation.
Q q	q	ceiṛt . . .	an apple tree
Z z	ṛd	ṛtṛaiṛ . .	a black thorn
Ng	ŋʒ	ŋʒiadal .	a reed stalk
Ea	ea	eaḃaḋ . .	an aspen tree
Io	io	iphiŋ . . .	a gooseberry tree
Oi	oi	oiṛ	the spindle tree
Y	ɤ	uillẹŋ . . .	the honeysuckle
Ae	ae	aṁanċoll	from *amhan*

a river, and *coll*, the hazel tree, of which were made hurdles for crossing of brooks and rivers.

The foregoing eighteen modern letters are, as other alphabets, divided into vowels and consonants. The former of these are called by the Irish, Gutaide, or sounds; and they consist of the letters *a*, *o*, *u*, which are named broad vowels, and *e* and *i*, which are denominated small. The consonants are termed Consoineada, and these are parted like the Greek into mutable and immutable. Of the former class there are nine, namely *b*, *c*, *d*, *f*, *g*, *m*, *p*, *s*, and *t*; and these, by placing a full point over them, or by the addition of an *h*, either entirely lose their original sound, or else become aspirated. "Some of these mutables," says Mac Curtin, in the Irish Grammar annexed to his English-Irish Dictionary, Paris, 1732, 4to. p. 675, "some of these mutables, or prime consonants, when an *h* is added, or a point set over, as it is most common in the manuscripts of the four last centuries, become other consonants, which therefore may be called Secondaries, or auxiliary mutes; and others are entirely suppressed. The force or pronunciation of each secondary mute is so different from the prime, that it requires a farther explanation." The following table will make these mutations sufficiently intelligible:

Ḃ	ḃ	is changed into	v	as in	Mo Brig, my Power.	Ṁ	ṁ	is changed into	v	as in	Don Muir, to the Sea.
Ċ	ċ		ch		Mo Ceann, my Head	Ṡ	ṡ		h		Mosuil, my Eye.
Ḋ	ḋ		y or u		A Duine, O Man.	Ṫ	ṫ		h		Motaob, my Side.
*Ḟ	ḟ		h		———	Ṗ	ṗ		f		———
Ġ	ġ		gh		Roga, Choice.						

* "When Pearon is aspirated," says Mac Curtin, "it is entirely mortified, and it is the following vowel that carries the sound; notwithstanding the *f* must not

As abbreviations and contractions were common in the ancient manuscripts of all countries, so they were used to a considerable extent in those of the Irish; and many of these were retained, even after they possessed a knowledge of printing. Mac Curtin, at the close of his Grammar, p. 716, gives a collection of such as he considered of the most common occurrence; and the following list will acquaint the reader of the present work, with those which are usually executed in type.

æ .. æ	ꝏ .. áo	ꝫ .. go, gan	ꝛ̈ .. tra
ꝺ .. an	ꝛ .. agus	ꝯ .. gur	ꝟ .. si
ꝗ .. ar	ꝛ̄ .. chd	ꝯ .. na	ꝟ .. ui
ꝗ̇ .. air	ꝗ .. ea	ꝯ̄ .. nn	ꝛ .. eadhon
	ꝗ́ .. éa	ꝯꝛ .. rr	

Before we proceed to a brief account of the *Ogham* characters of the Irish, we shall insert one specimen of their language in connection, executed in the Bethliusnion character, which was cast by Dr. Fry, for the purpose of printing the Irish version of the *Pentateuch*, of which Genesis and Exodus have already been finished and stereotyped, under the title of *The two first Books of the Pentateuch, from the original Irish Manuscripts, under the direction of* T. Connellan, Lond. 1820. 12mo. We have, as usual, followed the passage by a reading in the Roman character, and a literal translation into English.

See *Bioblia Naomhtha*, for the following, printed for the British and Foreign Bible Society, Lond. 1817, 8vo.

NA SEANRAITE, Caibidil IX. PROVERBS, Chapter IX.

10 Isé eagla an Tiġearna·tosaċ na
10 Isé eagla an Tighearna tosach na
The fear of the Lord *is the* beginning of

heagna: ꝛ éolus na náoṁ is tuigse sin.
heagna: agus éolus na náomh is tuigse sin.
wisdom: and *the* knowledge of the Holy is understanding so.

11 Oir is liomsa meideoċṫar do
11 Oir is liomsa méideochthar do
For there *is* by me multiplicity of

láeṫe, ꝛ foirlionfar bliaḋna do ṙaoġail.
laéthe, agus foirlionfar bliadhna do sháoghail.
thy days, and I extend the increase of the years of thy life.

be omitted, for it maintains the primitive sense of the word, as A fir-fell, you liberal man."

12 Ma bioñ tú crioña, biaid tú
12 Má bhíonn tú críonna, biáidh tú
If art thou wise, shalt be thou

crioña duit féin: act ma tarcuisnighioñ
críonna dhuit féin: acht má tharcuisnighionn
wise *to* thy self: but if scorn

tú, is tú féin amáin iomcoras é.
tú, is tú féin amáihn iomchoras é.
thou, it is thyself only *that* shall carry it.

The Ogham, or Ogum characters of the Irish, have been considered by many to afford a sufficient proof of the antiquity of their national letters; but when their nature and power are fairly considered, it will be found that nothing is gained by adducing them in evidence. The words *Oga*, *Ogum*, and *Agma*, are asserted by Ledwich in his *Antiquities of Ireland*, Dublin, 1790, 4to. to have been adopted from the Celtic language, and that they imply letters written in a cypher, or indirectly an occult science: it may also be remarked, that *Ogan*, in the Welsh language, is divination. By the *Ogham* writing is understood a cryptographic, secret, or cypher writing, which some would fain deduce from the Druids, since O'Halloran remarks, that the Irish letters were anciently called *Feadh*, alluding to wood; and that the *Oghams* are still entitled *Ogum Croabh*, or the Branchy type, as the name of each character is taken from some tree. The sentiments of Mr. Innes, upon this subject, have been already given; but O'Halloran, in farther proof of the Druidical origin of the *Oghams*, adds, that the first Irish writings were made upon tablets of the Birch tree, and that the pieces, when collected, were called *Taibhle-Fileadh*, or the Philosophical Tablets. Now, there is not an author of any authority who pretends even to have seen these tablets; but although the terms alluding to wood be allowed, yet, in all the Northern languages, in the words expressive of an alphabet, there is the same reference: thus, in the Icelandic, *Runa Stafr*, or the *Mysterious Staff*, also signifies an alphabet, and in the German *Bog-stab*, or *Buch-stab*, is synonymous with a letter, but literally translated, it means a Staff of the Beech tree. Moreover, the *Oghams* were a secret or stenographic writing, a short hand, in which it has been asserted that the Druids alone sealed up their mysteries; but such historians as treat of them, deny that they had any letters at all; since they perpetuated their knowledge and ceremonies by oral traditions only, and therefore still less was it probable, that they should refine upon the arts of language and writing, by inventing a sacred or hieratic character. We proceed, however, to give

some description of the *Oghams* themselves, concerning which so many disputes have taken place. According to the best authors on the subject, they were of three species; the first of which was called *Ogum Beith*, wherein the Irish letter *Beith*, the first consonant, was used instead of the vowel *a*, and the remaining vowels, with the diphthongs, were transmuted in the following manner.

A	E	I	O	U	AE	IA	UA	IO	OI
bh	fc	ng	dl	ft	mm	ll	bb	ec	pp.

Dio, and Suetonius in his *Life of Julius Cæsar*, relate of that Emperor, that when he wished to preserve his writings a secret, he used the fourth letter after that which he should have employed; and Isidorus also shews, that he sometimes varied his own cypher upon the same principle. Hence it is evident, that this *Ogum* was known to the Romans; and one of the many kinds of cyphers which they used, was introduced wherever they planted a colony or station; by which means they became adopted by all the rude people whom they had subdued. There are also instances of an *Ogum* of the above kind, as well as the ensuing, being used by the Runes, the Anglo-Saxons, and other Gothic and Celtic tribes. The second species of *Ogum* was denominated *Ogum Coll*, from the letter *Coll* or c, forming the sole key to it, as in the following instances:

A	E	I	O	U	EA	IA	OI	IO	UA
c	cccc	ccccc	cc	ccc	ᑦ	ᑦ	ɔ	ᑦ	ɔɔ

The third species of *Ogum* was entitled the *Ogum Croubh*, or Branchy type, the age of which has already been considered. It was composed of certain strokes and marks, which derived their power of letters as they stood in relation to one principal horizontal line, over or under which they were written. The upper part was called the left hand, and the lower the right, whilst the perpendicular, and diagonal lines which were drawn through it, stood for twenty letters, parted into five divisions of four letters each, the first fifteen standing for the consonants, and the last five for the vowels; and for the diphthongs and the letter z, arbitrary marks were added. It was in this *Ogum*, that King Charles I. corresponded with the Earl of Glamorgan, when he was in Ireland. There was however another kind of *Ogum*, which approached somewhat nearer to alphabetical writing, consisting of arbitrary characters called *Marcomannic Runes*. Wormius states, that they agreed with the Runic in shape and name, but it is asserted by O'Halloran, that the occult manner of writing used by the Northern nations, was derived from Ireland. These however, by many circumstances and authorities, might be proved to be of Teutonic origin. Farther information on the subject of the *Ogham* characters will be found in *Dr. Rees' Encyclopædia*, and in Astle's *Origin and Progress of Writing*, p. 179, pl. 31.

There are also several other languages belonging to the Celtic family, as the *Manks*, which sprang from the ancient Irish: the *Cornish* and the *Armorican*, or that dialect spoken in Bas Bretagne, in France, which were derived of the British: but as these are all now written in the Roman character, we do not proceed to notice them more particularly. Indeed, with respect to the foregoing collection of Ancient and Modern Alphabets, and their illustrative historical and antiquarian notices, we must be free to say, that a similar article, containing such a number of specimens, references, authorities, and interesting citations, has never before appeared in a work of this nature. It has stretched considerably beyond the limits to which we originally intended to have confined it, and yet we have frequently felt reluctance at the narrow space into which it has been compressed; for as the history of a language is pursued, a thousand lights and links of connection, which had before been unobserved, burst upon the view, and astonish by their novelty or their singular analogy. It is certain, that a large work on the ancient and modern languages of the world, with copious quotations and examples, must prove interesting to all persons; since philology is not alone concerned, but history, poetry, the rise and improvement of arts and science, are all involved in it. The production of such a work must, doubtless, occupy many years, and "the task," we may say, almost in the very words of Sir William Blackstone, "may be reserved for some masterly and comprehensive genius, elegant in his style, faithful in his narration, able and impartial in his judgment, who, being possessed of a thorough insight into the rise and gradual improvements of kingdoms, the frequent revolutions of ecclesiastical and civil polity, the classics, historians, and poets of all nations, the manners of their people at different periods of time, and their general connections and commerce; he, being accurately supplied with particular facts and occurrences by the laborious researches of others, might regulate and bring to perfection in a finished degree, this great and extensive work." Even in the pages which we have devoted to the subject, although they have consisted of little more than of compilation, the occupation has been one of considerable labour. Whilst we are sensible of its defects, and acknowledge that if the article were to be written again, many improvements might be made, we may still sum up what has been done, in the quaint but expressive language of old Anthony à Wood, and say, "a painful work it is, I'll assure you, and more than difficult, wherein what toil hath been taken as no man thinketh, so no man believeth, but he that hath made the trial."

CHAP. XIII.

THE DUTY OF AN OVERSEER.

Those persons whose ability or ambition induces them to aspire to the attainment of this most important situation, should be endowed with something more than an ordinary capacity, together with an even and forgiving temper; and whose rules of conduct should be founded upon the strict laws of Equity and Justice; not deviating in the least from the above standard in order to favour either the Employer or the employed; otherwise he may stand a fair chance of losing the good-will and esteem of one, or perhaps both of the above-named parties; he should always bear in mind, in all his actions, that a reciprocity of interests exist between them, which is indispensably necessary to the forwarding and excellent execution of any branch of Art, and that it falls precisely within his province to promote and maintain this union of interests to the utmost of his ability.

In houses where several presses are employed, an Overseer is indispensably necessary; it is true a small concern may be conducted by an Employer, if he were not liable to frequent interruptions while in business, together with the necessary absence from home: on which occasions a trustworthy Agent is of course required, not only to answer all applications, but also to attend to every department of the machine; otherwise (compositors and pressmen being at all times dependant on each other) one or both may probably stand idle, from the absence or neglect of duty in either party, or from the Employer's engagements abroad. Having presumed thus much, we shall now venture to offer a few hints for the benefit of those who are now, or who may hereafter be selected to fill this highly important situation.

It has been observed, that an Overseer should be the first and last in attendance at the office, in order that he may be satisfied that every person on the premises does his duty, likewise to observe that those on the establishment attend at their regular time :* we suggest, that the task of an early attendance in the morning would be more properly filled by the second in authority; because the principal manager would of necessity be frequently required to attend late in the evening to dispatch proofs, &c.

The office being now swept; and the type selected from the dust by the errand boy, that found in the body of the rooms should be given to the Overseer, or his deputy (if any), who ought immediately to distribute it, and then walk round the house in order that he may discover if the compositors

* We are sorry to offer a remark upon this subject; but its justness, we trust, will excuse us with those whom it may concern—we have known few, very few, of the gentlemen of the above class, who deserve our praise for a conscientious fulfilment of every portion of this most important duty.

have followed his example, by disposing of the portion found in each respective frame, likewise that no pie he left either on the frames, bulks, or gallies; should there be any, even a single letter, he should insist upon its being immediately distributed. Attention to this particular is of vast importance, because it not only keeps the office clear of pie, and thereby gives it a neat appearance, but it also prevents useful and valuable sorts from being buried, which would necessarily accrue from such neglect of duty.

He should likewise be possessed of a thorough knowledge of the state of every work in progress, and as a more effectual mode of expediting them, he may adopt the following rules. 1. In companionships, no man should be suffered to hold too large a taking of copy, otherwise he would keep his companions composing at random much longer than were necessary, which would of course retard the imposition of the sheet, and also require a much greater scope of letter to enable them to proceed with the work; from which cause, it is not at all improbable, but that the pressmen will have to remain idle in the first instance, and consequently the compositors in the second. 2. The moment a sheet is composed and made up, he should order it to be imposed, provided there be room on the imposing stone for that purpose. 3. The same expedition should be used in getting the proof pulled when imposed. 4. The Reader should receive it instantly, send it up leaf by leaf, to be corrected; which the Overseer of course will direct to be forwarded immediately, should no obstacle occur to prevent it 5. This duty performed, a second proof should be taken, which the reader should forward to the author, (if required,) or otherwise read it carefully through for press, the same expedition should be used in getting it finally corrected for working off.

A close attention to the above hints will enable an Overseer to conduct and keep in regular motion a concern of great magnitude, not only with satisfaction to himself, but also with credit to his Employer, for punctuality and dispatch of business.

Sorts not in general use, chases, furniture, leads, &c. should be locked up under the care of the Overseer or his deputy, in order that they may be in readiness when required; he would also find a memorandum book, in which an entry of such sorts should be made, highly beneficial.

He would also find a book, which we shall denominate a *Press Book*, of vast importance, in which he should regularly every evening, make an entry of the paper intended to be given out to wet, for the various works in progress. Upon the pressmen enquiring of him what they are to lay on next, he informs them, and in this book fills up the necessary columns, agreeable with the heads of the annexed table.

The Press Book.

When given out to wet.	Names of Work.	No.	Signature.	Date when laid on.	Names of Pressmen.	Hour when laid on
Nov. 7.	Magna Charta.	1000	F	Nov. 9	W. Watts.	5 m. p. 7. mor.
9.	Puckle's Club.	750	H	12	W. Lovatt.	20 m. b. 10 m.
12.	Physiognomical Portraits.	500	G, G 2	15, 17	W. & L.	8 m. ¼ p. 10 m.

After he has entered into this book an account of the paper intended to be wet, he sets down the same articles with the numbers and date, in a book called the *Wetting Book:* from this book the warehouseman receives his instructions for giving out the paper. It frequently happens in works of a large number, that one sheet is laid on by *two* presses; when this is *done it* is entered as the *Portraits*, in the annexed plan; viz. signature G, the outer form was laid on November 15, by William Watts, at 8 o'clock in the morning; the inner form G 2, was laid on November 17, by William Lovatt, at *half* past ten in the morning. It may appear, *to some*, trifling and *unnecessary* to *specify* in this book the hour of the day the pressmen lay on a form; but we would observe, that it is of importance to the Overseer, in his arrangements to provide for the presses, to be able to ascertain, by referring to the book, when they are likely to be off. This book also informs him of the quantity of wet paper, and the length of time it has been wetted; this is of importance when authors sometimes detains proofs *so* long, that the paper allotted for those sheets will mildew, if it be not hung up to dry within a seasonable period.

It is generally the business of the Overseer to revise *the* proofs for press, in doing which he will be careful not only to ascertain whether all the corrections marked in the proof are made, but also to cast his eye carefully over the sides, head, and bottom of each page, as it frequently happens that the folios or catch words drop out of the form in lifting it off the imposing stone; also in leaded matter, letters at the beginning and end of lines frequently fall out of their proper place, and by their standing crooked have a slovenly *appearance*. Before the revise is given to the compositor, the names of the pressmen who are intended to work off the form, should be entered in the *Press Book*. It should be an invariable rule with the *Overseer to* require a second revise, in order to see if all the corrections have *been made which* were marked in the first: this is indispensably necessary, particularly with foul compositors, as *no sort of dependance* can be placed on them. He should, (where there is not a person engaged expressly for the purpose, as is the case in houses employing ten or fourteen presses,) go regularly round, about every quarter of an hour, to the different presses, and examine their work, point out defects, if any, and glance again over the heads, sides, and bottoms of the pages, to see if any thing has been drawn out by the balls, which frequently occurs from bad justification of the lines, and careless and improper locking up of the form. An active and conscientious Overseer will not be content with merely managing the concerns of the composing-room; he will also see that the business of the warehouse is attended to with regularity and accuracy; and that the warehouseman, errand boys, and apprentices do their duty.

Having, in the present Chapter, presented the Overseer with the plan of a book called the *Press Book*, we shall introduce another of equal importance, (which we shall call a *Check Book*,) for the purpose of checking the bills of both the Compositors and Pressmen; by this book he would be enabled, at a single glance, to discover if any and what signatures are overcharged, the amount of corrections, and likewise by what pressmen the forms were worked at press; there being also a column left at the end of the table for him to enter down any observations which he may think necessary upon any of the items mentioned.

Plan of a Book for checking Compositors' and Pressmen's Bills.

Magna Charta, 8vo, Demy. No. 1000.

Signature.	Compositors.						Corrections.	By whom worked at Press.		Observations.
	Johnson.	Bishop.	Congreve					Outer Form.	Inner Form.	*Here the casting up of the sheet, press-work, the charge for wetting, &c. (if any) & all extra charges should be inserted.*
B	6	7	3				7s. 6d.	W. Lovatt.	W. Watts.	
C	12		4				5s. 6d.	W. Watts.	W. Lovatt.	
D										
E										
F										
G										
H										

In addition to the foregoing tables, we shall now lay before our readers another, equal in every point of view, which we shall designate with the title of the *Job Book*.

Date	Compo. Names	Compo. Charge	Presm. Name	Ditto Charge.	Corrections.	No. printed	For whom printed	Size and Description.	Fol. of Day-book

Plan of the Job Book.

By means of a *Job Book*, an Employer or Overseer will be enabled at a single glance, (without referring to the bills of the Compositors and Pressmen), to discover not only every charge that had been made upon a Job, but also for whom, the number printed, and the size and description, together with the full charge. An Overseer should be in possession of a thorough knowledge of every branch of his profession. It not unfrequently happens, either from a press of business, or the absence of the reader, that he may be necessitated to read for press; he should make it his study to qualify himself for that important duty: to this point we most particularly invite his earnest attention, and beg to refer him for useful hints upon this subject, to Chap. IX. p. 228, &c. ante. And should he conscientiously sustain the character which we have laid down at the commencement of this article, he will not only acquit himself with credit to his employer, but also prove by his conduct that he is an ornament to society in general.

Th' man who aspires to this high station,
Should for his guide seek moderation;
And Justice keep in view:
But few there are who reach the wish'd for height,
That justly keep strict equity in sight,
And render each his due.

To the Employer too much court is paid,
When by the men th'entrapping snares are laid,
To catch the wary elf:
Who, unsuspecting, daily plods along,
Nor heeds the snares placed by the wily throng,
T'entrap his noble self.

The bubble, thus kept up in air so long,
Thro' flattering tales and fulsome tongue,
By schemes at length is burst;
His office lost, he then most deeply wails,
To hate his shame he now invents new tales,
And [illegible]ems his lot most curst.

A warning this, for those who dare aspire,
When in this birth to raise themselves much higher,
And think 'twill last for life:
Should they but once o'erstep the compass bound,
By folly they're quickly brought to the ground,
To end their days in strife.

Rules and Regulations to be observed in a Printing-Office.

COMPOSITORS.

1. Compositors to receive their cases from the overseer, or other person appointed by him, free from all pie, or other heterogeneous matter, with clean quadrat and space boxes both Roman and Italic, which they are to return to him in the same state, or forfeit six-pence for each pair of cases.

2. When a compositor receives letter, furniture, &c. from the overseer, he is to return what he does not use, in the same state he received it, the same day, under the forfeiture of three-pence.

3. Compositors to impose their matter when desired by the employer or overseer, or forfeit two-pence for every hour's delay. The same for proofs that are desired to be corrected, unless in either case it shall appear that all the stones were engaged.

4. When the compositor imposes from furniture in chase, he is directly to tie up the pages of loose matter, or forfeit one penny for every neglected page, besides being obliged to clear away the pie thereby occasioned.

5. Forms, immediately after they are imposed, to be carried to the proof press, and the proofs when pulled to be given to the reader, or carried into the reading closet, with, if a first proof, the copy, and, if a second, the foul proof, under the forfeiture of one penny, for every quarter of an hour's delay.

6. Every compositor who shall leave a foul stone, either of letter, furniture, &c. shall forfeit one penny for every such offence.

7. Should a compositor detain an imposing stone longer than the nature of the business may require, he is to be fined two-pence for every hour's unnecessary delay.

8. When any cases are taken out of the racks, the compositor is to return *them* into their proper place immediately after he has done with the same, under the forfeiture of one penny for each case.

9. No cases to be placed over others, or under the frames, under the penalty of one penny for each case.

10. Galleys with head-lines, or other useful materials, during the course of a piece of work, to be cleared the day after the work is all completely at press, or the compositor to forfeit three-pence for each day's neglect.

11. When a work is completely finished, the compositor or compositors concerned shall, before he or they begin another work, unless prevented by the employer or overseer, clear away the forms, taking from them the head lines, white lines, and direction lines, as also the leads and rigleis: which, with the furniture of each sheet, and the matter properly tied up for papering, are to be given to the overseer, or any person he may appoint.

12. Sweepings of frames to be cleared away before one o'clock every day, under the forfeiture of two-pence for each neglect. Matter broken by accident to be cleared away on the same day under the like penalty.

13. A compositor mixing any two separate founts, without an express order from the overseer, to be fined one shilling.

14. When a compositor carries his form down for press, he is not to put two forms together without a partition between, on forfeiture

of two-pence; and in case, through neglect of such partition, a form should be battered, the compositor guilty of such neglect shall forfeit six-pence.

15. The saw, saw-block, bowl, sponge, letter-brush, sheers, bellows, &c. to be returned to their respective places as soon as done with, under a forfeiture of one penny.

16. Any person taking a candlestick, bodkin, snuffers, composing-stick, &c. not his own, without permission of the owner, shall be fined three-pence.

17. Any person misplacing cases in the rack, or taking an upper without the lower case, (*vice versa*), shall be fined two-pence.

18. That pie of any sort, on boards, windows, frames, &c. shall be cleared after five minutes' notice, under the penalty of six-pence.

19. That any person detected of taking sorts from the frames or cases of another, without leave, be fined one shilling. Should any person be detected in hoarding useful sorts, not wanting or likely to want them, he shall be fined six-pence.

20. Any person in the house, (except the master or overseer,) who shall call off the errand boy while he is sweeping his rooms, to be fined three-pence.

21. That the master forfeit two shillings and six-pence, overseer one shilling, and compositor six-pence, for every candle left without proper charge. The boundaries of the office to be considered the open air.

22. Jobs to be cleared away immediately after notice being given by the overseer, under the penalty of two-pence for every hour's delay.

23. All fines to be paid on Monday, before 12 o'clock, under the penalty of six-pence. The Treasurer to make application for the fines before that time, or be fined six-pence.

24. These regulations, in cases of extreme hurry of business, by leave from the master or overseer, may be suspended; but, when that has ceased, to be instantly resumed under the same forfeitures.

PRESSMEN.

1. All proofs to be pulled within five minutes after notice, or the pressmen who are in proofs to fine one penny for each form.

2. Immediately after pulling a proof, the pressmen to rub over the forms and chases with a lye-brush, and place them against the compositors' frame to whom they belong, where they are to leave the proof, or forfeit one penny for every neglect.

3. Working without a figure,* unless particularly ordered, a fine of three-pence.

4. As soon as a form is wrought-off, the pressman to carry it to the lye-trough, and there completely rub it over with lye, rinse it with water, and then carry it to the wrought-off place, or to the end of the compositors' frame it belongs to. Three-pence for each neglected form.

5. Leaving the lye-jar uncovered, a fine of one penny.

* The custom of working with figures is grown into disuse; in truth, they only disfigured the page without being of any utility; the necessity for this is obviated by means of one of the preceding tables.

CHAP. XIV.

THE BEST MEANS OF EXPEDITING BUSINESS.

To concentrate the employment of workmen as much as possible in every branch of business, is the best and only sure means of acquiring expedition and dispatch. This observation most forcibly applies to the Art of Printing. When pamphlets and other works of temporary and urgent nature are required at a very short notice, great exertion must be made, together with skilful management, to attain the object in view: we shall now submit the following plan, which we doubt not will answer the purpose.

When a work of this nature is put in hand, it is the province of the Overseer to select those men that are best able to go through the quantity of work required within the given time. The number being now selected, their first concern should be to fix upon the person best acquainted with his business, to take upon himself the entire management of the work; to make up, and do every thing which interferes with the regular business of distributing, composing, and correcting.

Having done this, they next proceed to the distribution of their letter; and the *clicker* (the person so appointed) applies to the overseer for the copy, receives instructions respecting it, and procures leads and every other necessary sort. He then draws out the following table:

Compositors' Names.	Folios of Copy.	Lines composed.	Memorandums.

In the first column he sets down the name of each compositor when he takes copy; and, in the *second*, the folio of the copy, that he may be able to ascertain, instantly in whose hands it lies. In the third column he notes down the number of lines each man has composed, opposite to his name, as fast as the galles are brought to him. In the fourth he sets down such remarks respecting the copy, &c. as may be necessary, and also any circumstance that may occur in the companionship.

By this means each compositor will receive a share of the amount according to the number of lines he composes, and the clicker must have an equal share, with the person

who sets the greatest quantity: or it may be done by limiting the quantity each man is to compose in an *hour*; whoever is deficient in this quantity must suffer a proportionate reduction from his share of the work.

When the companionship are ready for their first taking of copy, they are to receive it from the clicker in pieces as short as possible, taking care that the two first have shorter takings than either of the others, to prevent as much as possible, any delay in the making up. During the time the first taking is in hand, the clicker sets the half-head, head lines, white lines, and signature lines, together with notes (if few), and other extraneous matter.

As soon as the first person brings him his matter, he counts off the number of lines, and inserts them in the table; then gives him another taking of copy, and proceeds with the making up. The same plan is observed with the rest of the companionship.

When the first sheet is made up, he lays the pages on the stone, and informs the overseer of it, who will then immediately procure chases and furniture.

The work will now proceed rapidly, provided the compositors stick close to their business, and there be no delay with respect to letter, &c. which depends on the good management of the overseer. If the clicker finds that he cannot make up the matter as fast as it is composed, he should call one of the compositors to his assistance, who must be the person last in copy. In this case he counts the lines he has composed, sets them down in the table, and takes notice of the time he is off, which is to be made up to him by a deduction from the share of each person.

The proofs should be read immediately after they are pulled, and given to the clicker to be corrected. As soon as this is done, he lays up the forms, and gives the proof to the compositor whose matter stands first, who should immediately correct it, then forward it to the next, and so on, till the sheet be corrected; the clicker then locks it up, and carries the forms to the press.

As soon as one of the companionship is out of copy, and there is no more to give out, the lines of the whole must be counted off, and set down in the table, which closes the account, and then every one does as much as he can, for the general benefit. If there be not work enough to employ the whole, those who are not wanted may go to their regular work, and the time of their absence, till the rest of the companionship return to theirs, be deducted from their respective shares.

It would save time in making calculations, could the companionship agree to divide the amount of the bill between them in equal proportions, and merely fine those who may absent themselves from the office; but as some

compositors will set considerably more than others, the above mode will, we conceive, be found to answer best, as it excites a spirit of emulation, and induces them to pursue their work with vigour.

RULES TO BE OBSERVED IN COMPANIONSHIPS.

The disputes which frequently arise in printing-offices upon trifling as well as intricate points, can only be settled by a reference to the general custom and usage of the trade. These misunderstandings, which annoy and retard business, often take place in companionships consisting of three or four compositors; it is therefore highly desirable that the generally received rules and regulations on this subject should be explicitly and clearly laid down for the future comfort and government of the compositor.

Taking Copy.

If printed copy, and the compositor is desired to follow page for page, each sheet, as it is given out, should be divided into as many parts as the companionship may consist of, and the choice of each part, if it materially varies, should be thrown for. During the absence of either of the companionship, if he be likely soon to return, some one should throw for him, on condition that he will be able to get through this fresh taking, with what remains of the last, so as not to impede the imposition of the sheet.

Another method may be adopted, viz. for each person to agree to receive regularly of the different takings a certain number of pages; but if this plan be followed, the bulk of the copy must not be subject to the inspection of the companionship, but kept by the overseer, and dealt out by him as it is wanted, or it will inevitably cause contention; for the compositor likely to be first out of copy, if he has free access to that which remains unfinished, will observe whether the next taking be *fat* or *lean*—if the latter, he will hold back and loiter away his time, in order to avoid it, and thus materially delay the work. On the other hand, if this taking appear to be advantageous, and there should happen to be two or three of the companionship out of copy at the same time, a sort of scramble will take place who shall have it, which will end in dispute and confusion;—on no account, therefore, should the copy be open to examination, unless for the purpose of ascertaining the charge per sheet. With manuscript copy it will be better to take one from the other in such a manner as not in the smallest degree to delay the imposition, or block up the letter; that is, that no compositor may retain the making up too long by holding too large a taking of copy. Compositors are apt to grasp at a large portion of copy, with the view of advantage in the making up, though nine times in ten it will, as before observed, operate as a loss to them, by their eventually standing still for want of letter. If by mistake too much copy has been taken, the com-

positor should hand a part of it to the person next in the making up, to set up to himself.

If parts of the copy should be particularly advantageous or otherwise, each of the companionship should throw for the chance of it: the person to whom it may fall, if he have copy in hand, must turn that copy over to him who is about to receive more copy; but for trifling variations from the general state of the copy, it cannot be worth the loss of time necessary to contest it; though it frequently happens that a litigious man will argue half an hour on a point that would not have made five minutes' difference to him in the course of his day's work.

If one of the companionship absent himself from business, and thereby delays the making up, and there is the smallest probability of standing still for want of letter, the person who has the last taking must go on with this man's copy, whether it be good or bad.

Making up of Letter.

The number of the companionship, if possible, should always be determined on at the commencement of the work, that they may all proceed upon an equal footing. It should be well ascertained that the letter appropriated for the work will be adequate to keep the persons on it fully employed.

If any part of the matter for distribution, whether in chase or in paper, be desirable or otherwise, for the sorts it may contain, it should be divided equally, or the choice of it thrown for.

When a new companion is put on the work after the respective shares of letter are made up, and if there be not a sufficiency to carry on all the companionship without making up more, he must make up an additional quantity before he can be allowed to partake of any part of that which comes from the press.

Making up Furniture.

Two of the companionship who may have the greatest proportion of the first sheet, should make up the furniture for that sheet; and though it may be thought that a disadvantage will be felt in making up the first sheet, they having to ascertain the right margin, yet, properly considered, this disadvantage is sufficiently balanced by their not being likely to meet with a scarcity of furniture, which will frequently occur after several sheets are made up. The other companions in rotation, as their matter is made up, will take an equal share of the furniture. Should an odd sheet be wanted, it will be better to throw for the chance of making it up.

Imposing and distributing Letter.

The person to whose turn it falls to impose, must lay up the form for distribution; but as continual disputes arise on this subject, and as it can only be ascertained by comparing the number of pages composed, with the number put in chase by each person, we therefore recommend their keeping an exact account of these pages, which had better be done agreeable to the following plan:

Signatures.	Compositors' Names.							By whom Imposed.
B								
C								
D								
E								
F								

This scale should always be kept by the compositor in the making up; who, when he gives it away to the person that follows him, marks down the number of pages he has made up opposite to the proper signature, and under his own name; also when he imposes, he inserts his name in the column appropriated for that purpose. By following strictly this mode, every sort of dispute will be prevented: and though a private account may be necessary for individual satisfaction, yet it will not avail in settling a general misunderstanding, as the various private accounts may differ, and the charge of inaccuracy may be alledged with as much reason against one as the other; but in this general scale a mistake can be *immediately* detected. It also operates as a check on those who may be inclined to write out of their proper signature, or to charge more pages than they have imposed.

As the letter is laid up it should be divided in equal proportions; and, if it can be so managed, each person had better distribute the matter originally composed by him; for by this means, the sorts which have made his case uneven will again return to him. It may happen, from one of the companionship absenting himself, that his former share of letter remains undistributed at a time a second division is taking place; under these circumstances, he must *not* be included in this division. In the event of a scarcity of letter, if any man absent himself beyond a reasonable time, his undistributed matter should be divided equally among his companions, and when he returns, he may then have his share of the next division.

Correcting.

The compositor, whose matter is in the first part of the proof, lays up the forms on the imposing stone, and corrects. He then hands the proof to the person who has the following matter. The compositor who corrects the last part of the sheet, locks up the forms.

The compositor having matter in the first and last part, but not the middle of the sheet, only lays up the form and corrects his matter; the locking up is left to the person who corrects last in the sheet.

A compositor having the first page only of the sheet, is required to lay up one form; also to lock up one form if he has only the last page.

If from carelessness in locking up the form—viz. the furniture binding, the quoins badly fitted, &c.—any letters or even a page should fall out, the person who has thus locked up the form must immediately repair the damage. But if from bad justification, or in leaded matter the letters ride upon the ends of the leads, the loss attending any accident from this circumstance must fall upon the person to whom the matter belongs.

It is the business of the person who locks up the form, to ascertain whether all the pages are of an equal length; and though a defect in this respect is highly reprehensible in the person to whom it attaches, whose duty it is to rectify it, yet if not previously discovered by the locker-up, and an accident happen, he must make good the defect.

The compositor who imposes a sheet must correct the chargeable proof of that sheet, which is also generally at the same time corrected for press, and take it to the ready place. He must also rectify any defect in the register, arising from the want of accuracy in the furniture.

Forms will sometimes remain a considerable length of time before they are put to press. When this happens, and particularly in the summer, the furniture is liable to shrink, and the pages will, in consequence, if care be not taken, fall out; it is therefore the business of the person who has locked up the form, to attend to it in this respect, or he will be subject to make good any accident which his neglect may occasion.

When forms are wrought off, and ordered to be kept standing, they are then considered under the care of the overseer. When they are desired to be cleared away, it is done in equal proportions by the companionship. During the time any forms may have remained under the care of the Overseer, should there have been any alteration as to form or substance, such alterations not having been made by the original compositors, they are not subject to clear away those parts of the forms that were altered. If the pressmen unlock a form on the press, and from carelessness in the locking up any part of it fall out, they are subject to the loss that may happen in consequence.

The compositor who locks up a sheet takes it to the proof press, and the pressman, after he has pulled the proof, puts by the forms in the place appointed for that purpose.

Transposition of Pages.

Each person in the companionship must lay down his pages properly on the stone for imposition. The compositor, whose turn it is to impose, looks them over to see if they are rightly placed; should they, after this examination, lay improperly, still be thus imposed, it will be his business to transpose them; but should the folios be wrong, and the mistake arise from this inaccuracy, it must be rectified by the person to whom the matter belongs. Pages being laid down for imposition, without folios or head lines, must be rectified by the person who has been slovenly enough to adopt this plan.

Plan of a Compositors' Check Book.

Title of the Work.

Sig	Set.	Imposed.	Charged.	Sig	Set.	Imposed.
A				A		
B				B		
C				C		
D				D		
E				E		
F				F		
G				G		
H				H		
I				I		
K			Composed in all.	K		
L			Sheets. Pages.	L		
M				M		
N				N		
O				O		
P				P		
Q				Q		
R				R		
S				S		
T				T		
U				U		
X				X		
Y				Y		
Z				Z		

CHAP. XV.

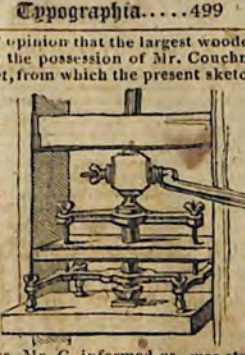
From Thee, O Press! what blessings flow
T' unworthy mortals here below!
Life's path to smooth;
The Widows' cause, the Infants' tear,
In Thee a friend are sure to rear;
Their loss to soothe.
Through Thee fair Liberty will stand,
Briton's proud boast throughout this land;
See Hist'ry's page!
The Press enslav'd, She'll lofty mope,
And England's sons in chains may groan,
From age to age!

HAVING now (agreeable with our notice in Chap. X.) presented our readers, in that and the two following Chapters, with an account of the various characters made use of in printing, together with a copious detail of the Ancient and Modern Alphabets, which we most humbly trust will be received, not only by the Literati, but by compositors in general, as a desideratum of no small importance. In the further prosecution of our labours, we purpose, as far as our confined limits will admit, to do ample justice (to the best of our humble ability) to the subjects which still remain to be treated of in the present work; therefore we propose (as our motto speaks) to devote the present chapter to the subject of the Press department, in which we shall glance at the various machines which have been obtruded on the notice of the Profession for the purposes of printing; whether they be considered as improvements, or only attempts at improvements, from which we shall make our selection, and present engravings of those only which, in our humble judgments, appear best adapted to the purposes for which they were intended by their projectors, and also worthy the consideration of the profession. It is our intention, in the concluding chapter, to glance at Steam Engine and Stereotype printing, as they regard the Printer, the Bookseller, and the Public in general.

'Twas thus, in the Art's early stage,
That Printer's form'd the letter'd page;
And each nobly fill'd his station,
To aid th' rising generation;
And has fair knowledge 'gan to spread,
Fell Superstition veil'd her head;
And quickly hast'ned from ev'ry part,
On sight of th' Typographic Art.

A good idea of the Presses on the old principle will be derived from the annexed subject, (an engraving of which was frequently used by Printers on the Continent, at that period, as a mark or device,) as well as from that given on page 555, in Vol. I. and we shall now proceed to describe those which are of a more recent invention.

We are of opinion that the largest wooden press in this country is in the possession of Mr. Couchman of Throgmorton Street, from which the present sketch of the working part was taken. Its construction much resembles those of Blaew's invention, having the platin attached to the spindle with screws and bolts, as here represented; it stands full high, and the tympans are exceedingly low, and heavy: it was worked by a comer, which pound power, was attached to the top of the screw, about eight inches above the head, as we were told by the men: this apparatus, Mr. C. informed us, was stolen from the office some years back, during the lifetime of his father: the press is now worked with a common bar. We have been informed, that the power which was attached to the top of the spindle, and by which it was said the press was worked, was only a common fly, which was composed of two crooked *S*'s laid crossways, and well charged with lead at each end. The platin is 2 feet 2 inches long, by 1 foot 8 inches wide, the coffin is 3 feet 7½ inches long, by 2 feet 5½ inches wide between the corner irons, and will print more than a double royal sheet. This press was made for the old Duke of Norfolk to amuse himself with; he could also boast of having the largest, as well as the smallest sized press; the latter would only print a small card. These two presses, the type, &c. were sold upwards of fifty years back, when the late Mr. Couchman purchased the large press, and likewise a case-rack.

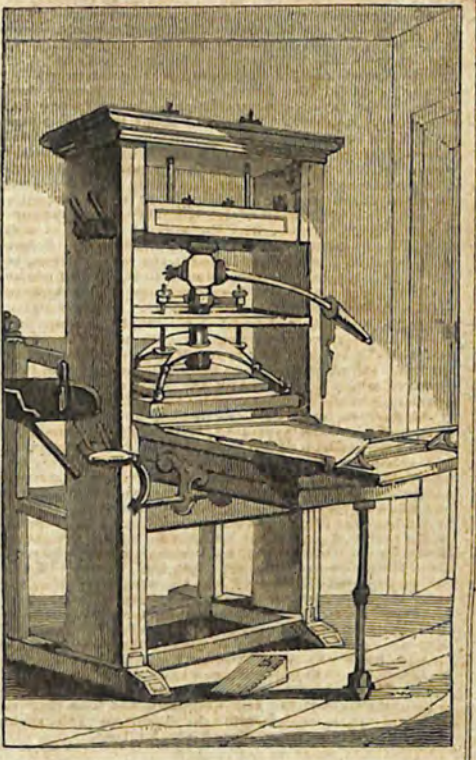


We could not conceive how it were possible for a press to be worked by such a power; first, the arms of the fly (to work between the cheeks) would be too short to produce an impression; secondly, it would be impossible for a person, standing upon the floor, to have had the least power over such a lever: we deem the use of this fly not for the purpose of giving the impression, instead of the bar, but as a compound power by which the motion of the bar was accelerated by the force of the fly above, consequently the pull was comparatively easy in proportion to the impression given.

ON THE CONSTRUCTION OF PRINTING PRESSES.

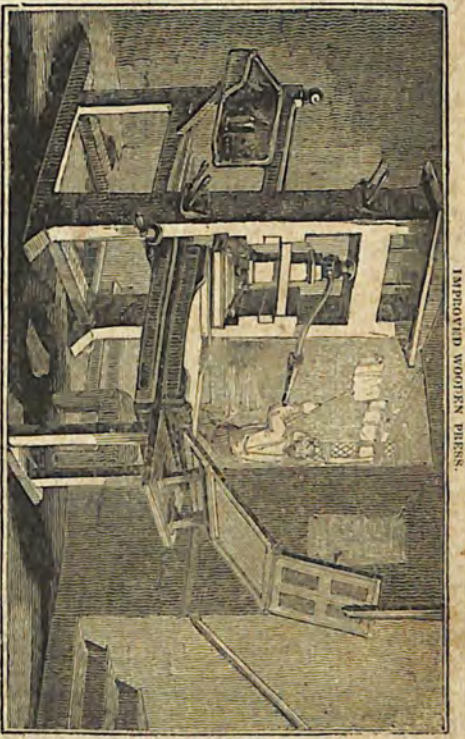
The improved Presses were in general use throughout Holland, several years before their introduction into England, and the first change in their construction was wrought by an ingenious artist, named Willam Jansen Blaew, of Amsterdam, a man as famous for his excellent Printing, as for his Astronomical and Geographical productions. In the early part of his life he was employed as a joiner; but, having served out his time and being of an inquisitive disposition, he rambled to Denmark, about the period that the famous Tycho Brahe was establishing his Astronomical Observatory, by whom he was entertained, and under whose instructions he was employed in making Mathematical Instruments, in which curious art he made very considerable improvements; this occasioned it to be generally reported, that all or most of the Syderal Observations published in Tycho's name, were the work of Blaew, as well as the Instruments with which they were made. Before these Observations were published to the world, Tycho, to gratify Blaew, gave him the copies of them, with which he went to Amsterdam, and there practised the making of Globes, according to those Observations. As his trade increased he was enabled to deal in Geographical Maps and Books, and became so particularly curious in his plates, that many of the best Globes and Maps were engraved by himself. He projected also a Universal Atlas, in the execution of which he engaged all the most celebrated geographers, and the best works of his time. It was published at Amsterdam, in 3 vols. folio, in 1638, in which year he died, aged 67; but his two sons, John and Cornelius, produced a new edition of his work in 1663, consisting of 14 folio volumes. When these books are found entirely coloured, they are both rare and valuable; as a fire destroyed a large portion of the stock of Blaew's sons. Jansen Blaew was likewise the author of a Treatise on the Globes, and by his frequent Printing of books, he got such a knowledge of the practical part of the art, that he set up a Printing-House for the transaction of his business; wherein he soon found the inconveniencies attending the structure of the old Presses, which induced him to contrive remedies for every inconvenience, in which he succeeded so much to his expectation, that he caused nine new Presses to be made, each of which he called by the name of one of the Muses. As the excellence of these improvements soon became known to other Printing Houses, which induced their proprietors to follow Blaew's example, so that Presses of his structure became, in the course of a few years, almost general throughout the Low-Countries, and from thence, of late years, notwithstanding the opposition of the ignorant, they have been introduced into England.

PRESS INVENTED BY BLAEW.



IMPROVED WOODEN PRESS.

It would have been impossible for our Readers to have formed any thing like a correct idea of the mechanism of Blaew's Press from the engravings heretofore given; we have endeavoured to obviate this difficulty in the foregoing subject, by representing it as clear as possible. In its construction, it differs very little from those of the present make, the most material alteration appears to have taken place with respect to the steadying of the spindle; that is, the crane, and likewise the flange to which the plattin was attached, are removed, and a square box, with a collar at the upper, and four hooks at the lower end, are substituted: this box was made sufficiently hollow to admit the spindle to pass through it, the toe of which entered into the cup placed on the plattin; it passed through the till, and gave equal or more solidity to the spindle, than the crane invented by Blaew. These Presses (similar to the annexed engraving) have been in general use in this country for more than the last century, and they would most probably have remained so, had it not been for the iron press invented by the late Earl Stanhope, an engraving of which will be given in our next article: but no sooner had these presses made their appearance, than several of the Printers' Joiners and Smiths suggested to the Master Printers the advantages to be derived from the addition of a compound power attached to the wooden press; this suggestion was embraced with avidity by several, and most of the others speedily followed; but they were little aware of what they were about; and in most instances they had done even worse than nothing, for they were no sooner altered than they were again out of repair, as some part or other generally gave way; in truth, the Wooden Press was not calculated to bear the extreme pressure thus applied, and not unfrequently this power was attached by persons little capable of appreciating the force of the leverage thus given. At this period about half a dozen beautiful presses upon the French construction, with long levers, which were pressed downwards, were in the possession of three or four Master Printers of the Metropolis, who, from the solicitation of these would-be connoisseurs in presses, were induced to consent to have them altered according to the fancied improvements; but they were no sooner put to work than the Masters found to their cost that they had purchased a blank, rather than a prize; but it has ever been, and still continues to be, the general practice of a majority of the Printers of the Metropolis, to adopt almost every new invention upon its first introduction; and many, we are firmly persuaded, have had too great reason to regret their over anxiety for new-fangled articles, before they were sufficiently in possession of their real qualities, whether good or bad.

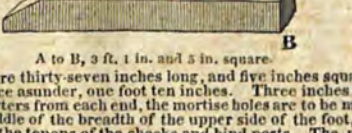


IMPROVED WOODEN PRESS.

It will not be irrelevant in the present place to glance at the properties of the Wooden Press; the build in this country (excepting those only upon the French plan) were uniformly made with small plattins; consequently it was necessary to pull twice with every full form: it was difficult, and almost next to an impossibility, to prevent some of them from doubling in the impression, particularly in Twelves: but, notwithstanding the pressmen had to pull twice for each impression, they could get through equally as much, if not more work than the iron press with one pull: this may appear strange to those unconnected with the Art, but we are fully persuaded that most practical printers will coincide with us in the above opinion: we do not pretend to state that the work so done would bear an equal comparison; that by the iron one would undoubtedly be far superior; our observation only applies as far as regards common work. When the extra power was applied, they were generally made to act with one pull; but the plattins (although many of them were faced with iron) were apt to spring at the ends, and consequently failed in producing that even impression, which is so essentialy necessary in production of good printing.

This Press consists of the following parts: the *feet, cheeks, cap, winter, head, till, hose, garter, hooks, spindle, worm, nut, eye of the spindle, shank of the spindle, toe of the spindle, plattin, bar, handle of the bar, hind-posts, hind-rails, wedges of the till, carriage, outer frame of the carriage, iron ribs, wooden ribs on which the iron ribs are fastened, stay of the carriage, coffin, plank, gallows, tympans, frisket, points and point screws.* These are the different names of the parts of the Press; but to convey a more perfect idea of its construction, we shall present our Readers with engravings of the repective parts, and their proportions.

The Feet.

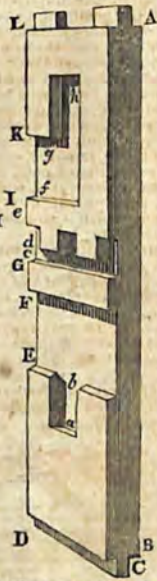


A to B, 3 ft. 1 in. and 5 in. square.

The feet are thirty-seven inches long, and five inches square; the distance asunder, one foot ten inches. Three inches and three quarters from each end, the mortise holes are to be made on the middle of the breadth of the upper side of the foot, for receiving the tenons of the cheeks and hind-posts. The mortise holes for the cheeks are eight inches long; those for the

hind-posts, two inches and a half, and one foot seven inches asunder. For the sake of ornament, the ends may be bevelled off according to the taste of the joiner, but care must be taken not to weaken them by so doing.

The Cheeks.

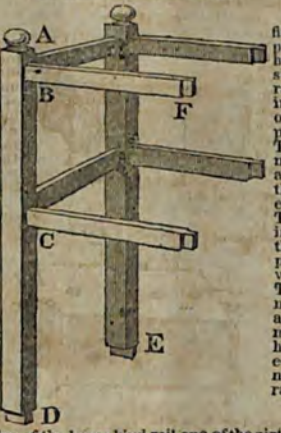


The cheeks are six eet one inch long, and a half broad, and eight inches thick, with a tenon and five inches lower tenon enters at each end. The foot, and is cut fore part of the and three and a eight inches long, the mortises. half deep, to fit The end of the cheek is tenon at the upper breadth, and en- cut across the half an inch of the ters the cap within and the feet are top. The cheeks with two wooden fastened together each other about pins, distant from feet eleven inches, three inches. Two the cheek, one half from the bottom of a foot, and an inch of the thickness of to admit a free pas- long, is cut away, sage for running in fin. In the middle out of the cof- der of this cutting- fer of the lower away, is a mortise seven inches and a half long, and three inches wide, and in which is fitted a tenon made at each end of the winter. Four inches from the upper part of this cutting-away, another is made, of the same depth, two inches and a half long, to admit a block two inches and a half thick, of the width of the cheek, on which the till rests. Above this, two mortise holes are made, two inches and a half long, correspond- ing with the tenons at the end of the till. Three inches above the till, and a ther piece is cut away, nine inches and a half long, and four inches wide, half through the breadth of the cheek, to admit the depth of the head. Just above this cutting-in, is made a square mortise in the middle of the cheek, two inches wide and eight inches long, for the tenons of the head to play in.

A to B	6 ft. 1 in.		I to K	0 ft. 9 in. and a half	
B to C	0	3 and a half	K to L	1	2 and a half
D to E	1	10	a to b	0	7 and a half
E to F	1	1	c to d	0	2 and a half
F to G	0	4	d to e	0	2 and a half
G to H	0	5	f to g	0	9 and a half
H to I	0	3	g to h	0	8

The Hind Posts and Rails.

Six rails are fitted into
the hind- posts, two of
them be- hind, and
two on each side; one of
the hind- rails to be
placed two inches from
the top, the other level
with the up- per side of
the winter. These two
rails are te- noned at
each end, and made so
long that the posts
may stand even with
the cheeks. These te-
nons are let into morti-
ses made in the insides
of the hind- posts, and
fastened in with wood-
en pins. The side-
rails are te- noned at
each end, and let into
the mortises made in the
cheeks and hind posts,
and fasten- ed in the
same man- ner by the
hind- rails.



In the centre of the lower hind-rail, one of the girths is either nailed or fastened with a screw.

On the top side-rails and hind-rail, the back-board is placed, for defending the ribs from dirt, and also for affording a convenient shelf for the pressmen.

The height or length of the posts, from A to D	4 ft.	2 in.
Their distance asunder, from D to E . .	2	2
Length of the rails, from B to F . .	1	6
Their distance asunder, from B to C . .	1	2 and a half.

The Cap.

The cap is three feet long, eleven inches wide, and four inches thick. The front and two sides are ornamented with a neat moulding; the front projecting about an inch and a half, and the sides three inches and a half, over the cheeks.

About three inches from each end, two mortise holes are made, to admit the tenons of the cheeks; also two holes through which the head bolts pass

The Winter.

The length of the winter, exclusive of the foot tenons, is one eleven inches; the width, nine inches and a half; the depth, nine inches. The projection of each of the tenons is two inches. These tenons are made the whole depth of the winter, to fit and fall into the mortises in the cheeks.

Length, from B to A	1 ft.	11 in.
A to C	0	9 and a half
C to D	0	9
Projection of the mortises, F and E	0	2

The Head.

The length, from A to B	1 ft.	11 in.
Depth, from D to E	0	10 and a half.
Width, from B to C	0	9
Projection of the mortise, D and F	0	2

The length of the head, exclusive of the tenons, is the same as the winter, viz. one foot eleven inches; the width, nine inches, and the depth, ten inches and a half. The projection of the tenons, two inches. The front of the head projects half an inch over the range of the front of the cheeks. The tenons, like the winter, are also cut from the top to the bottom of the head, and made to fit easily into the mortises in the cheeks.

In the centre of the bottom of the head, a hole is cut about four inches square and three inches and a half deep, to admit the brass nut in which the screw of the spindle works. This nut is secured and kept in its proper place by means of iron bolts, about three quarters of an inch square, and nine inches and a half long, which go quite through the head, having at their ends a hook turned square, to clasp upon the underside of the nut. At the top of these bolts there are screws that project about an inch above the head, which, by the help of nuts and washers draw the hook of the bolts close against the nut, and thereby keep it in a fixed and a perpendicular position.

In the centre of the top of the head a small, round hole is bored, to admit oil into the nut and spindle when necessary.

Three inches from each end of the head, two bolts pass through that and the cap, of twenty inches in length, and about three quarters of an inch square. These bolts have a square head, which stop against and are let in level with the under side of the head. They have coarse screws at the top, which are furnished with nuts and washers. Upon these bolts rests the weight of the head, and by them the head is screwed up or let down as occasion requires.

The Carriage and Ribs.

Length, from A to B 5ft. Width, from A to C 2 ft. 2 in.

The carriage is a frame of five feet long, and two feet two inches broad, on which the ribs are placed. The two end rails are each four inches thick, and the side rails, two inches and a half thick.

Between the two side-rails, are framed into the end-rails, two wooden ribs, two inches and a half broad, and an inch and a half thick. They are placed at an equal distance from each side-rail, and the same distance between each other. Upon these the steel ribs are fastened. These ribs are made about four feet eight inches long, and an inch thick. The uppermost sides, on which the cramps rest, are of a convex form, the others perfectly flat. The two ends are flattened to about a quarter of an inch thick, and holes drilled for the purpose of fastening them to the end rails. In the middle of the outer end of each rib, a small piece of iron, about a quarter of an inch thick, with holes drilled in it, projects, which is also nailed to the wooden ribs. The inner side of each rib is polished, to admit the shoulder of the two first and two last cramps. This is a late improvement on the common press. It prevents the shaking of the coffin, and the slur on the work which consequently attended it.

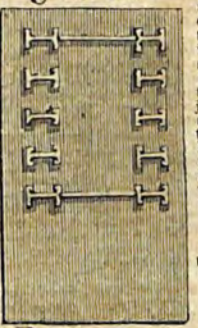
The ribs must be of an equal height and thickness, and lie exactly horizontal, in straight lines: for the smallest irregularity in this respect will affect the cramps, so as to render some of them useless.

The Coffin, Plank and Cramps.

Length of the coffin, from A to B . . . 2 ft. 7 in.
Width, from A to D 2 0
Projection of the plank beyond the coffin, B to C 0 11

Front View.

C Back View.



E.

The plank of invariably made three feet long, and one inch thick, on which cramps and the fin is a square seven inches wide, and three this the stone is

Upon each of ers of the coffin called a corner- and screwed with the wood turn-sides about on each side, an inch thick, and a quarter broad. per outer sides plates another fastened with vets through iron is half an outer angles but the inner tuse, being slop- the inner angle, the end of each the purpose of chase with hinder end of coffin, two iron ed, by means of screw and nut, tympans, which half-joints to keep the tym- steady, without be impossible to

the coffin is now of mahogany, two feet wide, and a quarter is fastened the coffin. The cof- frame, two feet, long, two feet inches deep; in bedded.

the four corn- an iron plate, iron, is let in perfectly level work, with re- six inches long eighth of an two inches and Upon the up- of each of these strong iron is two or three ri- each side. This inch deep; the only are square, angles are ob- ed away from towards the far- inner side, for securing the quoins. At the the frame of the joints are fasten- an iron plate, to receive the have also two match These pans perfectly which it would keep in register.

The dimensions gure. The dis- eramps,

A to B . .	
A to C . .	
D to E . .	

es in the last fi- tance of the from

.	0 ft. 5 in.
.	0 3
.	1 3

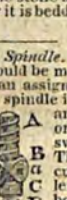
The Press Stone.

Marble stones are the best; and could the bedding of them in the coffin be always depended on, they would turn out to be the cheapest. Purbeck being much cheaper than marble, is now generally used.

The stone should be of an equal thickness, about a quarter of an inch less than the depth of the inside of the coffin, as the bedding will raise it the necessary height above the surface of the coffin. Its length and breadth must be a quarter of an inch less than the length and breadth of the inside of the coffin, to admit of justifiers between the stone and coffin, which are put to keep the stone steady after it is bedded. The face should be perfectly smooth and level.

The Spindle.

The worm of the spindle should be made with such declivity, that it might come down at an assigned progress of the bar. In a whole revolution of the spindle in the nut, the toe ought to come down two inches and a half; but it seldom, at work, makes more than one quarter of a revolution, at one pull; in which sweep it comes down but five eighths of an inch. The length of the worm is five inches; and its circumference, seven inches and a quarter. The whole length of the spindle is twenty one inches. The bottom of the spindle is called the toe, which is about a quarter of an inch in diameter, made of well-tempered steel, that by long or careless use the point of pressure wear not on one side, but remain in the axis of the spindle.



The length of the worm, from A to B	5 in.
B to C	3 and a half.
The distance across, from a to a . .	3
C to D	1 and a quarter.
E to the toe	11

The Hose, Garter, and Hose Hooks.

The hose is composed of a long, square box, or block of wood, through which is turned a hollow cone, fitting the conical or tapering part of the spindle. The spindle is held firmly in this cavity of the hose, by the following arrangement: to the inner face of the piece DD, and the corresponding pieces on the other side of the hose, are fixed curved pieces, as shewn at E in the small figure. This is called the half-moon garter, and is used to hold the spindle by the groove E, *(see figure of spindle)* by tightening the screws shewn in the figure of the hose. The hose is cased with thin sheet iron on every side, from the piece DD, downwards; and the hooks shewn at C, in the figure, are fixed to the lower end by nuts and screws.

The side, from A to B	4 in. and three quarters.
The height, from B to C	10

Bar and Handle.

A to B	0 ft. 4 in.	C to D	1 ft. 4 in.
B to C	1 3	E, (the handle) the same length	

The bar is made of wrought iron, of about three feet long, and its greatest thickness, in circumference, five inches, except the shoulder. The square pin, about an inch and a half thick, and three inches long, from the shoulder, enters the eye of the spindle, which it should be made to fit with a great degree of nicety. At the end of this pin an eye is made, through which an iron key is put to fasten it perfectly tight to the spindle.

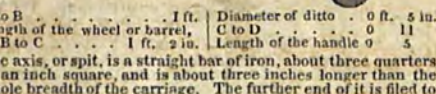
The wooden handle is twenty inches long, and, in the thickest part, ten inches in circumference. A taper hole is made through the handle, into which the small part of the bar enters, and is fastened by a screw at the end of the handle. About four inches from the shoulder it is bent, agreeable to the above sketch, which lies ready to the pressman's hand, that he may catch at it to draw the handle of the bar within his reach.

Catch for the Bar.

The catch for the bar is made of two pieces of beech, in the form of a cross. The short piece is eight inches and a half long, and two inches wide, bevelled at each end, and in the centre of the side which is screwed against the cheek, a piece is cut out, about two inches long, and half an inch deep, to admit the other piece of ten inches long, tapered off to the end on which the bar rests. This cross is screwed against the cheek, and fixed in such a position, as to retain the bar on its rebounding from the form.

Length of the piece A B. 8 inches and a half.
Ditto, of the catch D C. 10 inches.

Spit and Wheel.



A to B	1 ft.	Diameter of ditto	0 ft. 5 in.
Length of the wheel or barrel,		C to D	0 11
B to C	1 ft. 2 in.	Length of the handle	0 5

The axis, or spit, is a straight bar of iron, about three quarters of an inch square, and is about three inches longer than the whole breadth of the carriage. The further end of it is filed to a round pin, three quarters of an inch long, and three quarters of an inch in diameter; the near end is filed away to another round pin, but is two inches and a quarter long. At an inch

and a quarter from this end, is filed a square pin, three quarters of an inch long; and within half an inch of the end is another round pin, with a screw and nut on it.

On the square pin is fitted a winch, on which is placed the rounce, five inches long. The round ends of the spit are hung upon two iron sockets, fastened with screws on the outside of the two outer rails of the carriage.

The wheel, or girth barrel, is made of beech, of such a length that it may play easily between the ribs; and of such diameter, that in one revolution a length of girth may wind about equal to half the length contained between the fore-end of the inner tympan, and the inside of the rail of the inner tympan.

The Fore-stay.

The fore-stay is made of four pieces of wood, mortised together for the purpose of supporting the end of the carriage, to which it is screwed by means of two inch-screws, of about five inches long, with nuts.

Height, from A to B	2 ft. 5 in.
Width, from C to D	1 8

The Till, or Shelf.

The till is made of mahogany, one foot, eleven inches long, nine inches wide, and two inches thick. It has two dovetail-tenons at each end, about an inch and a half long, an inch broad, and an inch and a half distant from each other: these tenons are laid in the mortises in the cheeks. In the middle of the till, a square hole of four inches and three quarters is made, lined with brass plate about the sixteenth of an inch thick, through which the hose passes. This square should be made to fit the hose with much nicety.

Length, from A to B . . .	1 ft. 11 in.
A to C	0 9
The square for the hose.	0 4 and three quarters.

The Plattin.

The plattin is ma'e of mahogany, one foot seven inches long, thirteen inches wide, and four inches thick. The face of the plattin must be perfectly level and smooth. Near the four corners, on the upper side, four iron hooks are placed, with their shanks wormed and screwed, and leaning towards the plattin plate. In the centre of the plattin, the iron plattin plate is let in a quarter of an inch deep. This plate is eight inches long, four inches broad, and a quarter of an inch thick. In the middle of is an iron frame, two inches square and half an inch high, it placed to receive the stud of the circular brass plattin pan. The stud is made to fit nicely into the iron frame, which keeps the pan firm and steady, and may be taken out with ease if required.

In the middle of the bottom of the pan is a small steel centre hole, in which the toe of the spindle works.

Length, from A to B	1	ft. 7 in.
B to C . . .	1	1
C to D . . .	0	4

The Outer Tympan.

The outer tympan is a square frame, both sides and one end of which are made of beech, and the other end of iron. It is two feet wide, and two feet seven inches long. The breadth of the end, which is tened to the cofin by an iron match joint pinned on to another half joint, one inch and a quarter wide, and one inch deep: the two sides run taper from this to the iron end, which is about the thickness of a window case- ment, and half an inch wide. Upon the outer edge of this iron, about an inch and a half from the end of it, are made two iron half joints, to contain a pin, about three quarters of an inch in circumference, in which, entering this half joint and the match joint in the frisket, fastens it securely, and enables it to work easily on the tympan. In the middle of each side of the tympan, a mortise is made through, half an inch wide, and six inches long, to receive the square shanks of the point screws, and to allow them to slide easily backward and forward.

The length, from A to C	2	ft. 7 in.
A to B . . .	2	0

Gallows and Sockets.

On the hind part of the plank, at three inches distant from each side, are nailed the sockets to receive the gallows, on which

the tympans rest. The width of the gallows is two feet, its height nine inches. The sockets are seven inches long, two inches and a half wide, and two and a half deep. The socket holes are cut slanting, on which the gallows reclines. The sockets are screwed or nailed down on the plank, and may be easily moved backward or forwards, to raise or lower the tympan, agreeable to the wish of the pressman. In the space on the plank, between the sockets, one of the girths is fastened on with a thumb screw, which answers the purpose much better than nails, as they injure, and frequently split the plank.

The Inner Tympan.

The inner tympan is also a square frame, one foot ten inches wide, and two feet six inches long, the sides and one end of which are also made of wood, and the other end of iron. It is made so much shorter than the outer tympan, that the outer edge of the iron of the inner tympan may be within the edge of the iron of the outer tympan; and it is made so much narrower than the inside of the outer tympan, that a convenient space may be allowed to paste a vellum between the inside of the outer tympan and the outside of the inner tympan. The two tympans are fastened by hooks fixed on the outer tympan, and eyes on the inner.

The length, from A to B 2 ft. 6 in. & a half
B to C . 1 10

Points and Screws.

Points are made of sheet iron, of different lengths about the sixteenth part of an inch thick, and in shape agreeable to the above cut. The spur of the point is rivetted at the small end, and projects about three eighths of an inch; the top of it is filed away to a fine point. The large end of the point fits into the square shank of the point screws. These screws are made of iron, with a thin head, about an inch square, and a square shank just under the head, an inch deep, and half an inch square. Under this shank a screw is made, with a nut, and washer, which, when put through the inner tympan, draws the head of the shank close down to the tympan, and by that means secures the point in its proper place, on the outer tympan.

The Frisket.

The frisket is a thin iron frame, made of different sizes, with match joints at one end, through which an iron pin is placed. About the middle of the near side of the frisket, a small piece of iron projects, called the ear, or thumb piece.

Length, from A to B	2 ft 2 in. and a half.
A to C	1 9

The Ink-block.

The ink-block is made of beech, the bottom of it two inches, and the sides three quarters of an inch thick; its length thirteen inches, the depth four inches, and width nine inches. This block is fastened to the near upper rail and hind post; and the left hand outer corner of it is cut away.

The Brayer and Slice.

The brayer is also made of beech, and turned round on its sides, and flat on the bottom; its length, including the handle, is about seven inches long, and the bottom part about two inches and a half in diameter. The slice is a small iron shovel, the broadest part about four inches, and about the eighth of an inch thick. Its length, including the handle, is eight inches long.

The Ball Stocks and Ball Racks.

The ball stocks are made of dry, well seasoned elm, and turned hollow, of a conical form; their greatest diameter five inches and a quarter, and their length four inches. The handle of the stock is made of beech, four inches and a half long, and an inch in diameter. The racks are also made of elm and beech, the sockets of which are elm, and the pins beech. The sockets of the first rack which is nailed on the near cheek, two feet nine inches and a half from the bottom, is nine inches wide, and four and a half long; that end of it which receives the pins is one inch and a half thick, the opposite end only half an inch thick. The pins are nine inches long, and distant from each other three inches.

Another rack, double the width and containing four pins, is also fastened to the near cheek, eight inches from the top.

Bank and Paper-horse.

The bank is a deal table, three feet four inches long, twenty-two inches wide, and three feet high. About five inches from

the bottom, a board is placed within two inches of the length and breadth of the bank, and fastened to the legs, which serves as a convenient shelf for pressmen to lay their worked-off lieaps. The paper-horse is also made of deal, two feet two inches long, and twenty inches wide, forming an angle of about forty-five degrees, six inches of the highest end of it rising nearly to a perpendicular. The horse receives the wet paper, and is placed on the bank near to the tympans.

Practical Directions to Pressmen.

We shall now briefly lay down a few directions; which if properly attended to, will, we are persuaded, enable the pressman to do credit to himself, and justice to his employer, as well as to uphold and preserve that superiority which now so eminently distinguishes the *British Press.*

Of putting up a Press.

An understanding pressman should know not only how to direct a printer's joiner to set up and fasten a press when it is made, but also how to give a strange joiner and smith instructions to make a press, perfect in all its parts, and in a symmetrical proportion, to any size.

This knowledge every pressman should be anxious to obtain, as he would then be able to detect and mend those accidents and defects which frequently happen in the common press; we therefore recommend particularly to his attention, the foregoing description of the parts of the common press, which will give him a thorough knowledge of its principles and operation.

The joiner having set together the frame, viz. the cheeks, feet, cap, head, till, winter, hind-posts, ribs, carriage, &c. the pressmen directs, and sees him perform as follows:

Before the head is put into its place, the pressman rubs the whole tenoned ends and tenons well with soap or grease, and also the mortises the head slides in, and so much of the cheeks as the ends of the head work against, that it may the easier work up and down.

The feet must be placed upon an horizontal level floor, and the cheeks perpendicularly upright, the stays or braces placed so as the press may be kept in the most steady and stable position, as well as to give a check to the force of the hardest pull and most violent blow the bar may give by rebounding against the farther cheek, if by chance it slip out out of the pressman's hand. This consideration may direct him to place one brace against the end of the cap that hangs over the near cheek, and in a range parallel with the fore and hind side of the cap: for the more a brace stands aslope to the two parellel sides, the less it resists a force offered to the end of them, viz. the near end of the cap which is one main stay to the whole press. If he places another brace against the hinder corner of the farther end

of the cap, it will resist the spring of the bar, when it may slip out of the pressman's hand: and placing two other braces, one against the near corner of the hind side of the cap, and the other against the farther corner of the fore side of the cap, the press will be sufficiently braced up, if the room will afford convenience to place the farther end of the braces against it.

By convenience, is meant a firm solidity to place the end of the braces against, be it either a stone wall, brick wall, or some principal post, or a girder, &c. that will not start or tremble at the force of a pull. The braces ought to be straight, and of substance strong enough proportionable to their length; and, if possible, to be fixed in such a position that they may stand in the same straight line with the upper surface of the cap, viz. that the farther end of the brace neither falls lower or rises higher than the upper side of the cap. Neither ought the brace, though thus placed, to stand aslope or askew, that is, make unequal angles with the side of the cap it is fastened to, but it ought to stand square, and make right angles with the respective sides of the cap; because in those positions the braces best resist the force of continued pulls.

But though this be, by the rules of architecture, the strongest, firmest, and most concise method for bracing up a press, yet the room the press is to stand in will not always admit of conveniences to place the braces thus; therefore the pressman ought to consider the shape of the room, both for the places to fit the braces to, and the positions to set the braces in; placing his braces as correspondent as he can to these rules.

The press being thus far fastened, the carriage is laid on; and if the joiner performs his part well in making the wood work, it will first lie exactly horizontal; if not, it must be altered where it is amiss, before the pressman can lay the stone, and before the stay of the carriage can be fitted under the end of the ribs.

Laying, or Bedding the Stone.

The carriage being flat and horizontally laid on the winter, and the coffin placed on the ribs, the stone should then be bedded. Some pressmen lay them in bran, others in plaster of Paris, and a third class prefer brown paper: in either case the stone should be raised about a Double Pica above the surface of the coffin, a few good pulls will reduce it to a Pica, from which it ultimately will settle to that of a Brevier, which ought to be the standard.

In laying the stone on either of the above substances, great care should be taken that the whole bottom of the stone touch the bedding at the same time; to this end, when the stone is laid on the edge of the coffin, two strong cords are placed under it, by which the pressmen gently lower it

into the coffin, the least unevenness of which being likely to disturb the bedding; having pressed it down, a small portion of water laid on the centre will sufficiently prove whether it be even or not, should the water incline to either side, the stone must then be relaid.

Setting the Rounce

Properly, saves labour and facilitates the work: the girths being nailed on the barrel, and the press run out, the near girth will be half a turn on, and the off girth about three turns round it. In the old presses the girths were nailed to the head of the coffin and the plank; but this is now obviated by means of screws, so that the pressmen can alter the rounce with little trouble. The rounce should be set in such a position, that the fore-end of the tympan will just rise and fall without touching the fore-edge of the platten.

Hanging the Platten.

A heavy form should be laid on the press, and either two blankets, or about a quire of paper placed on it; the platten is set on the head of the coffin, and gently rolled in, at the same time his companion holds the platten in a slanting direction, in order that the point of the spindle clear the top of the pan, so that it may fall into the cup destined to receive it: the platten is then placed on the form, in the centre of the press, parallel with the fore sides of the cheeks, and adjusted with the greatest nicety. The bar is then pulled down, by which means the toe of the spindle is forced into the cup on the platten; a paper-board is then placed between the off cheek and the bar, by which means it is kept down; it is then securely fastened to the near cheek with a strong rope. Having provided cord with a nouse at one end, they begin at opposite diagonal corners of the platten, to lash the cord under and over on the hooks with as much force as possible, till about two feet only of the cord remain, which should be twisted round the previous lashings to bind them close together, and then fasten them off with three or four hard knots; having finished the first tying, they then proceed with the second in the same manner, which will make each part firm and tight.

Justifying the Head.

To justify, or scale board the head, is to put in a sufficient quantity of scaleboard, into the mortises left in the cheeks, for the head and winter to play in; the quantity should be exactly equal, in order that the head and winter may have an exact bearing on each side. The *pull* is made either long or short, by adding or diminishing the wadding previously placed in the mortises. A long, soft, or soaking pull, is when the form feels the force of the spindle by degrees, till the bar comes almost or quite to the near cheek of the

press, in a soft, soaking, and easy manner; on the contrary, the short pull is termed a hard pull, because it is suddenly performed.

In justifying the head, the nuts of the head screws, or long bolts, must be loosened, in order that the head sink enough to admit the removal or addition of the scaleboard in the mortises: this done, the head is screwed up sufficient for the carriage to run in, the bar should then be pulled down, and the screws drawn up with the finger and thumb, which will allow the head sufficient space to work freely.

A new press should always be well employed for the first few months with heavy forms, and the pressmen ought to be particular in doing their duty, by taking care that they always keep on a sufficient power, and see that the bar be well pulled down. This is the only sure means of making it work free and well ever after; many a press has been spoiled by this neglect, and also that of working jobs at them before they are properly brought to their bearings.

Making ready a Form.

Before a form is laid on, the pressman should carefully wipe down the stone, or table of the press, for if any hard particle, though ever so small, remain, it will raise that part of the form, cause the impression to be hard, and probably injure the tympans: the same caution should be taken with the backside of the form. The form being laid on the press in the centre of the plattin, and properly quoined up, he then lays down the tympans and gets his blanket, or blankets, which should be well rubbed if they are the least hard; Welsh flannel was formerly used, but the fine printers substituted broad cloth: within the last two years a superior article has been manufactured of different qualities, suitable for every description of work.* Having put in the blankets, he then fits the inner tympan into the outer, and fastens it with the hooks, or button for that purpose, which serves to keep it from springing. He next folds a sheet of his paper according to the position of the crosses of the chase, which is his guide for placing it in the centre of the form; should his crosses be equal in the chase, he folds his paper in Quarto, and for Twelves accordingly. It was customary, formerly, to wet the tympans for all works, and even jobs of almost every description; but since the introduction of fine printing, and particularly the iron presses, this old custom is well-nigh banished, excepting for extraordinary heavy forms, composed with old letter, which of course require more softness to bring them off: having laid his sheet even upon the form, he then lays down the tympans, which with the least possible damp will cause

* These blankets are manufactured by W. Whitehead & Company, Oak View Mills, Saddleworth, Yorkshire; and sold by Mr. John Brealey, 17, Love Lane, Eastcheap, London.

the sheet to adhere to them: should it happen to have been laid uneven, it is much better to relay it, because this sheet (which is denominated the tympan sheet) is the guide by which the whole impression of the form of white paper is worked. He next selects his points, for large paper short-shanked, and for small, long-shanked points, and others in proportion to the intermediate sizes of paper; for his points ought to be so placed, that they may prick the point holes within the grasp of the hollow between his right hand thumb and fore-finger; because, when he works the reiteration, he may the better manage and point the sheet when he is laying it on the tympan. The points should not be placed too near the edge of the paper; because, in working the reiteration, he would be forced to carry the off point hole the further from him, which in a long number is a loss of time; as the laying of the sheets quickly on the point holes adds much to dispatch. Also the less distance between the points the better, as it saves time: because he must draw his body so much the further back, to place that hole on its point; therefore for Folios, Quartos, or Octavos, &c. the near point should be placed farther in than the off one; but for Twelves they should be placed at exact distances from the edge of the paper. By placing the points unequally in Folios, &c. as before-mentioned, he also secures himself the more from a turned heap when he works the reiteration. When a press has a run upon the same work, they seldom or ever remove the quoins on the further or right hand end of the carriage or table, but let them remain as gauges for the following forms: for by thrusting the chase close against those quoins, the register is almost, if not quite made; provided the chases run equal as to size. Having fixed on his points, he then lays down the tympans, within about an inch and a half of the form, in which position he holds it at the upper part with his left hand, while he sinks his body *till* he can see between the form and the tympan, and with the ball of the middle finger of his right hand presses gently upon the tympans over the ends of each point successively, to ascertain if they fall in or near the middle of the grooves of the short cross, if not he moves them; should the sheet have been taken up properly, and the points carefully fixed according to it, there can be little doubt but the points will fall in their places. Under the head of making ready the form, are comprehended several operations, viz. 1 The frisket should be covered with stout paper, and when the paste is sufficiently dried, it is pulled on the form, the frisket is then taken off the tympan and laid on a board, and the pages cut round with a sharp knife, about a Nonpareil from the edge of the margin of each page, it is then replaced on the tympan; after which it would be adviseable to put a few cords across, not only to strengthen the bars of paper, but also to keep the sheets much closer to the tympan than

would otherwise have been the case if the paper bars had been left to perform this office alone: at times it is necessary to work with cords only, where the margin is too small to admit bars of paper.

2. He next examines his form, to see that it is properly locked up and plained down.

3. That no letters or spaces lie in the white lines of the form, nor between the lines in leaded matter; which sometimes happen after the compositor has finished correcting.

4. Should any wood cuts be in the form, they must be brought to an equal height with the type; that is, by filing or scraping away, if too high, or by underlaying with card or paper, if too low: they may be humoured a little by means of an overlay, or by cutting them out of a sheet in the tympans if too high: should there be much card or paper underneath, they will be found to sink a little from the repeated impressions, consequently the cuts will require an additional underlay when that takes place.

5. If any white page or pages happen in a form, and he uses a newly covered frisket, he does not cut out that page; but if he works with an old frisket, and that page is already cut out, he pastes on a piece of paper to prevent it from blacking; he then puts on a beard, to keep the adjoining pages from having too hard an impression: some pressmen use reglets, others have furniture cut to a proper height, and a third class adopt cork, which from its elasticity, in many cases is very useful: spring bearers, made of hard paper rolled up, are also very serviceable to guard the sides and bottoms of light and open pages, when there is an inclination to slur, which with some presses cannot be prevented.

6. He examines whether the frisket bites; that is, whether it keep off the impression from any part of the pages; if it does, he cuts away so much, and about a Nonpareil more, off the frisket where this happens.

7. He examines if the beards of the letter print at the feet of the pages; if they do, he considers whether the too short or too far running in of the carriage causes it; or whether it be only the beard of a short page that comes off: if the last be the cause of it, he remedies it by a bearer.

8. If the carriage be run in too short, and the feet of the pages stand towards the plattin, the hind-side of the plattin will press strong upon the feet of those pages; and if the carriage be run in too far, the feet of the pages that stand towards the hinder rail of the tympan, will most feel the force of the plattin; and according to a greater or less proportion of that force, and to the softness or yielding of the paper, tympan, and blankets, and all other springs in the press, the feet of the pages and beard of the letter will more or less print hard. In this case he runs the carriage under the plattin, till the further edge of it just covers the feet of

the upper pages, he then makes a mark on the off side of his tympan on a line with the front of the plattin, as a guide for his first pull; he next runs in so as to clear the lower pages, when he makes a second mark to which he is to go for the second impression.

9. He examines if the catch of the bar will hold it when the spindle makes a small spring, viz. when the bar flies but a little way back from the pressure of the form; if it will not, he knocks up the catch higher, and then screws the screw on the shank, and consequently the catch close and firm against the cheek of the press. But if the catch stand too high, so that it will not without a great spring (viz. when the bar is pulled hard from the further cheek) fly up, he then knocks upon the top of it, to sink it lower; and, when it is well fitted, screws it up again as before. If the catch stands too low, it will not hold the bar, but will come down when he is at work; for if, as it often happens, he *lets* the bar fly back harder than ordinary, or if it slip out of his hand, it will knock hard against the cheek, and spring back again. If the catch of the bar stands but a little too high, the violence of the bar's flying back to make it stick on the catch, will soon loosen the square of the bar in the eye of the spindle, and indeed subject the whole press to an unstable condition.

10. He considers whether the catch of the frisket stands either too forward or too backward. It may stand too forward, though when it is leisurely turned up it stays the frisket; because, when the pressman is proceeding in his work, though he generally throws the frisket quick up with an accustomed, and, as he intends, equal strength, yet if his guess at strength in throwing it up varies, and it comes though but a little harder up, the catch will make the frisket *return*; and though, as it sometimes happens, a solid wall serves to do the office of a stay for the frisket, yet with a little too hard throwing it up, the frisket itself will so shake and tremble from end to end, that before it recovers rest, its own motion will, by the quick running of a spring, throw it back again. If the catch stands too backward, then, after he has given the frisket a touch to bring it down, it will be too long before it comes down, and retard the progress of the work, and not unfrequently cause the sheet to slip out of its proper place; he therefore places the catch so, that the frisket may stand a little beyond a perpendicular backwards, that with a near-guessed strength in the tossing it up it, may just stand, and not come back; for then, with a small touch behind, it will again quickly come down upon the tympan.

11. He fits the gallows so that the tympan may stand as much towards an upright as he can, because it is the sooner let down upon the form and lifted up again. But yet he will not place it so upright as to prevent the white sheets

of paper from laying secure on the tympan; and for reiteration sheets, their laying upon the points secures them.

12. He considers the situation of the foot-step, and he places it so as may best suit his own stature; for a tall man may allow the foot-step to stand farther off and lower than a short one, because his legs reach further under the carriage, and he can tread hard to add strength to his pull; when a short man must strain his legs to feel the foot-step, and consequently diminish the force of his pull.

13. Few pressmen will set the range of the paper bank to stand at right angles with the plank of the carriage; but they draw the further end of the paper bank so as that the near side may take an angle of about seventy-five degrees, more or less, with the near side of the carriage. The reason is, if the near side of the paper bank stand at right angles with the near side of the carriage, he must carry his hand farther when he lays or casts sheets, which would occasion delay: besides, his companion has a nearer access to it to look over the heap, which he frequently does, to see the colour of the work.

14. The pressman brings his heap, and sets it on the horse, on the near end of the paper bank, as near the tympan as he can, yet not to touch it, and places an end of the heap towards him. He then takes the uppermost or outside sheet, and lays it on the bank: and taking three or four, or five quires off his heap, he shakes them at each end, to loosen the sheets, that with pressing, stick close together, and not finding them loose enough, he shakes them long-ways and side-ways, to and fro, till he finds he has sufficiently loosened or hollowed the heap. Then with the nail of his right hand thumb, he draws or slides forward the upper sheet, and two or three more commonly follow gradually with it, over the hither edge of the heap, to prepare those sheets ready for laying on the tympan.

Rubbing out Ink.

Before the pressman goes to work, he rubs out his ink. If it has lain long on the ink-block since it was last rubbed out, the surface of it is generally dried and hardened into a film or skin, for which reason he carefully takes this film quite off, before he disturbs the body of the ink; for should any, though ever so little of it, mingle with the ink, when the ball happens to take up the little particles of film, and delivers them again upon the face of the letter, they produce picks, print black, and deface the work; and if they get between the face of two or more letters, or the hollows of them, they will obliterate all they cover; and if they be pulled upon, and the pressman not careful to overlook his work, they may run through the whole heap. Having carefully skinned off the film, he brings forward a small quantity of ink near the edge of the block, which he rubs well

with the brayer. Care should be observed not to brayer out much at a time: for if this be done, it will be impossible to preserve any degree of uniformity in taking ink.

Of Beating.

Beating is an important part of a pressman's business, which, if not properly done, renders every other operation almost useless. A careful beater will never be found to take much ink at one time, but keep brayered out in the front of the ink-block a small quantity, that he may be certain of never receiving more than is necessary. The great art in beating is to preserve a uniformity of colour, which is easily performed by paying a proper attention to the taking of ink: this done regularly, and the form beat well over, the beater may be said to have done his duty.

All pressmen do not beat alike; but the method generally followed by good workmen is, the moment the tympans are lifted up, to lay the balls on the left hand near corner of the form, that he may the more readily carry them to the near right hand corner, while his companion is casting the sheet on the bank; if this opportunity be lost, it occasions delay, and in all probability leaves that corner untouched by the ball, and makes what is technically termed *a friar.*

In beating over the form, the elbows should be kept rather inward, and the ball stock handle inclining outward, in order that the balls may be perfectly upright; it will also enable him to go over the corner before mentioned with greater ease and certainty. This plan, if strictly followed, is unquestionably the most expeditious, as well as the least liable to defects, if common attention be observed by the beater. He begins, as already observed, at the right hand near corner, and goes up that side of the form and returns, and leaves off at the left hand near corner, taking care to make the form feel the force of the balls by beating hard and close. In the operation of beating, the balls should be constantly turning round in the hands, as it keeps them in their proper shape, and thereby renders them more safe and pleasant to work with.

The balls should not go too far over the form, for they are liable to gather dust, and consequently throw picks on the form, which are not easily got rid of. These picks, and every other defect, it is the business of the beater to look carefully after, and to endeavour to mend and prevent. His companion can also, when taking off the sheets, give a slight glance over them; but the uniformity of the work will depend principally upon the beater. He will point out to the puller any defects in laying on the sheets on the tympan, or if he neglects to pull down the work with the force it requires.

Having thus gone twice upwards and downwards with the balls, beating close and strong, the form may then be

considered sufficiently beateh; but if he beats the first sheet of a fresh form, or after the form has been lately washed and consequently damp, or makes a proof, he goes three, four, or five times upwards and downwards, for the letter will not take the ink without several beatings.

Of Pulling.

The puller lays on sheets, lays down the frisket and tympans, runs in and out the carriage, takes up the tympans and frisket, takes of the sheet, and lays it on the heap. All these operations are in general mingled and lost in the name of pulling; and as in pulling, so in beating; for though the beater brayers out the ink, distributes it on the balls, peruses the heap, &c. yet these operations are also lost in the general name of beating.

To take a sheet off the heap, he places his body almost straight before the near side of the tympan: but he nimbly twists the upper part of his body a little backwards towards the heap, the better to see that he takes but one sheet off, which he loosens from the rest of the heap by drawing the back of the nail of his right thumb nimbly over the bottom part of the heap, (but in the reiteration care should be taken to draw the thumb on the margin, or between the gutters, that the sheet may not smear or set off), and receiving the near end of the sheet with his left hand fingers and thumb, catches it with his right hand about two inches within the further edge of the sheet, near the upper corner, and about the length of his thumb below the near edge of the sheet, and brings it nimbly to the tympan, and at the same time twists his body again before the tympan, only moving his right foot a little from its first station forwards under the coffin plank; and as the sheet is coming to the tympan, (supposing it to be white paper) he nimbly disposes the fingers of his right hand under the further edge of the sheet near the upper corner; and having the sheet thus in both his hands, lays the further side and two extreme corners of the sheet down even upon the further side and extreme further corners of the tympan sheet; but he is careful that the upper corner of the sheet be first laid even upon the upper corner of the tympan sheet, that he may the sooner disengage his right hand. If, however, by a quick glance of his eye, he perceives the sides of the sheet lie uneven on the tympan sheet, with his left hand at the bottom corner of the sheet, he either draws it backwards, or pulls it forwards, as the sheet may lie higher or lower on the near corners of the tympan sheet, while his right hand, being disengaged, is removed to the back of the ear of the frisket, and with it gives it a light touch to bring it down upon the tympan, laying, at the same moment, the tympan on the form. He then, with his left hand, grasps the rounce, and with a moderate strength nimbly gives the winch about

one turn round; but to regulate his running in, he first makes a mark, as before observed, on the further rail of the tympan, to which mark he runs the carriage in, till he brings the mark in a range with the fore-edge of the plattin; and as it is running in, skips his hand to within an inch or two of the end of the bar, and then gently leans his body back, that his arm, as he pulls the bar towards him, may keep a straight posture; because in a pull it has then the greatest strength. He now puts his right foot upon the footstep, while his left hand holds fast by the rounce, as well to rest on the footstep and rounce, as to enable him to make a stronger pull; which will prove longer or shorter according to the strength put to it. Then disengaging his right hand again from the handle of the bar, he slips it to the bow of the bar, before the handle rebounds quite back to the cheek of the press; for should the bar by its forcible spring knock hard against the cheek of the press, it might not only shake some of its parts out of order, but subject the whole machine to injury; besides, the further the bar flies back, the more he is retarded in recovering it again. But yet he must let the bar fly so far back as that the plattin may clear the tympan; lest, when he runs in for his second pull, the face of the plattin rub upon the tympan, and force the sheet upon the face of the letter, which slurs or doubles it, and destroys the sheet.

Having made the first pull, and the rounce still in his left hand, he turns it round again, till the carriage runs in so far as that the second mark of the rail of the tympan comes in a range with the further edge of the plattin, as before; and then pulls his second pull as he did his first, and slips his right hand again off the handle of the bar to the bow, guides the bar expeditiously to its catch; and just as he has pulled his second pull, he gives a quick and strong pressure upon the rounce, to turn it back, and run the carriage out again; and, as soon as he has given this pressure he disengages his left hand from the rounce, and claps the fingers of it towards the bottom of the tympan, to assist the right hand in lifting it up, and also to be ready to catch the bottom of the sheet when the frisket rises and conveys it quick and gently to the catch; and while the frisket is going up, he slips the thumb of his left hand under the near lower corner of the sheet, which, with the assistance of his two fore-fingers, he rises, and by so doing allows the right hand also to grasp it at the top in the same manner, which lifts the sheet carefully and expeditiously off the points, and nimbly twisting about his body towards the paper-bank, carries the sheet over the heap of white paper to the bank, and lays it down upon a waste sheet or wrapper put there for that purpose; but while it is coming over the white-paper heap, though he has the sheet between both his fore fingers and thumb, yet he holds it so loosely, that it may move

between them as on two centres, as his body twists about from the side of the tympan towards the side of the paper bank. Thus, both the pressman's hands at the same time are alternately engaged in different operations; for while his right hand is employed in one action, his left is busy about another; and these exercises are so suddenly varied that they seem to slide into one another's position, beginning when the former is but half performed.

Having thus pulled a sheet and laid it down, he turns his body towards the tympan again; and, as he is turning, gives the next sheet on the white paper heap a touch with the back of the nail of his right thumb, as before, to draw it a little over the hither edge of the heap, and lays it on the tympans, &c. as he did the first, and so successively every sheet, till the whole heap of white paper be worked off. As he comes to a token sheet, he undoubles it, and smooths out the crease with the back of the nails of his right hand, that the face of the letter may print upon smooth paper. And being printed off, he folds it again as before, for a token sheet, when he works the reiteration.

Having worked off the white paper of twelves, or any form imposed like twelves, he places his right hand under the heap, and his left hand supporting the end near him, turns it over on the horse, with the printed side downwards: if octavo, or similar works, he places his left hand under the heap, and also supports the outside near end with his right hand, and turns it over, viz. one end over the other. In performing this, he takes from the worked off heap so much at once between both his hands as he can well govern, without disordering the evenness of the sides of the heap, viz. a token or more, and lays that upon the horse; then takes another lift, and so successively, till he has turned the whole heap.

Having turned the heap, he proceeds to make register, which he does by laying one of the sheets just printed, on one side, upon the tympan sheet, for a register sheet, and a waste sheet over that to keep it clean from any filth the face of the letter may have imprinted upon it, and pulls these two sheets. He then runs out the carriage, lifts up the tympan, and takes off the two sheets, laying the waste sheet by; but turns the other side of the register sheet, to observe if the second impression falls upon that of the first; if they do, the register is then made: but should the last impression stand uneven with the one first printed, either the whole length of the sheet or a part, he then moves the form accordingly; that is, he either drives it from, or brings it towards him, by means of the quoins against the corner irons; or brings the form higher or lower, by the same means, should the heads require putting into register. A considerable portion of the trouble attending the making of register for a sheet would be saved, if the pressman would be very

particular in placing the form in the centre of his press for the white paper, this is found by running the carriage gently in, and observing that the mark on the front of the platin falls in line with the centre of the long cross; and also the putting on of his points, which is of the utmost importance, either for a sheet or a half sheet of Twelves in particular, without which it will be almost next to an impossibility that he can even make register, much less to keep it afterwards, because for this size almost every thing depends upon the exactness of the points. With a half sheet, the register should be properly made before the form is proceeded with, although in some cases we are free to admit, that through the least unevenness of the long cross in particular, it will be necessary to make an alteration in one quarter, when the first side is worked off; a great matter in the making of register depends on the proper locking up of the form; which should be gently tapped up all round, (after the quoins have been forced up tight with the finger and thumb, and so proceed from quarter to quarter, repeating the locking up until it is sufficiently tight to secure the type from dropping out. In locking up a form, the quoins at the feet should be gently struck first to force up the pages and prevent their hanging; but in unlocking the side quoins are first slackened, otherwise, should the matter be leaded, the leads are very liable to be bent, if not broke, by the foot of the page being first unlocked.

But it sometimes happens that the compositor has not made the white exactly equal between all the sides of the crosses; in this case, altering the quoins will not make good register; the pressman therefore observes which side has too much or too little white, and, unlocking the form, takes out or puts in such a number of scaleboards as he thinks will make good register, which he tries by pulling a sheet, and if it be necessary, alters it again, till he has pulled a sheet with good register.

Having made register, he proceeds to work it off; but he somewhat varies his posture in laying on the sheet; for, as before, when he worked white paper, he caught the sheet by the upper further corner with his right hand, he now, having taken up the sheet, catches it as near the further side of the further point hole as he can, with the ball of his right hand thumb above the sheet, and the ball of his fore finger under the sheet, the readier to lay the point hole over its respective point; which having done, he slips his body a little backwards, and both his hands with it; his right hand towards the near point hole, with the back of the nails of his fingers to draw or stroke it over the point; and the fingers of his left hand, as they come from the further corner, nimbly slipping along the bottom edge of the sheet, till they come to the hither corner; and then with his fore finger and thumb lays hold of it, in order to guide the point

hole on that point also; then pulls that sheet, as before, as he did the white paper, and so successively all the rest of the reiteration. The token sheets, as he meets with them, he does not fold down again, as he did the white paper.

Covering the Tympans.

The tympans are covered with vellum, forrels, or parchment. They should be of an equal thickness, and about two inches and a half wider, and three inches longer than the tympans.

Tympans have been sometimes covered with Irish cloth, which, on account of its evenness, would answer the purpose; but it is so apt to stretch, that the tympans become slack in a short time, and bag (as it is termed,) which occasions a slur on the work. Muslin also has been used, but it is likewise subject to the same objection as the cloth.

Having provided some stiff paste, he lays so much of it on the edges of the skin, as will cover the tympan, which is also well pasted. He then lays the skin on the tympan, and draws it regularly, as tight as possible, on all sides. That part of the skin that comes on the grooves of the tympan which receive the point-screws, is cut and wrapt round the inside edge of the groove, which admits a free passage for the screws. After having fastened the skin on the sides of the tympan, he draws it towards the joints which receive the frisket, and with a knife cuts across these joints to let them through the skin; he then puts the frisket pins through the same, and makes that end of the tympan fast. He next proceeds to the lower joints, and brings the skin as tight as he can round that part of the tympan. The point-screws and duck-bill are then put on, which prevent the skin from starting. The inner tympan is covered in the same manner, and in order to prevent its warping, a stick or a piece of furniture is placed in the centre of it, till it be perfectly dry. The skins are put on either wet or dry; if dry, they should be afterward well wet, which makes them give for the moment; they are then drawn as tight as possible. As they dry, they contract, and are by this means rendered much tighter than they would be if put on wet.

Of Wetting Paper.

Paper is commonly wet in a trough *full* of clean water. The pressman places the dry heap on the left hand of the trough, and a paper-board with its breadth before him on his right, laying first a wrapper or a waste sheet of paper on the paper-board, that it may not soil the first sheet of the heap. Then he takes up the first token, and lays it with the backs of the quires towards his right hand, that he may the readier catch at the back of each quire with that hand; he lays that token across the rest of the heap, that he may the easier know when he comes to the end of it.

He takes a quire by the centre of the back in his right hand, and the edge of it in his left, and lays it down upon the waste sheet, opens it, and lays on it a few sheets.

Having laid down his dry laying, he takes the remainder of the quire off the dry heap, with the back of it in his right hand, and the edge of it in his left, as before, and closing his hand a

little, that the quire may bend rather downwards between his hands, he dips the back of the quire into the left hand side of the trough: and discharging his left hand of the quire, draws it through the water with his right; but as the quire comes out, he quickly catches the edge of it again in his left hand, and brings it to the heap; and by lifting up his left hand, bears the under side of the quire off the dry paper laid down before, lest the dry sheet should stick to the wet before he has placed the quire in an even position, and so perhaps wrinkle a sheet or two, or else put a dry sheet or two out of their even position. But this drawing the quire through the water, he performs either quick or slow; if the paper be weak and spongy, he performs it quick; if strong and stubborn, slowly. To place this quire in an even position, he lays the back of it exactly upon the open crease of the former, and then lets the side of the quire in his left hand fall flat down upon the heap; and discharging his right hand, brings it to the edge of the quire, and with the assistance of his left thumb, still in its first position, opens or divides either a third or half of the whole quire according to the quality of the paper; and spreading the fingers of his right hand as much as he can through the length of the quire, turns over his opened division of it upon his right hand side of the heap. Having wet his first token, he doubles down a corner of the upper sheet of it on his right hand, so that the further corner may lie a little towards the left hand of the crease in the middle of the heap, and that the other corner may hang out on the near side of the heap, about an inch and a half; this sheet is called the token sheet, as being a mark for the pressman, when he is at work, to know how many tokens of that heap are worked off.

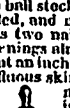
Having wet the whole heap, he lays a wrapper or waste sheet of paper upon it, that the paper-board may not soil the last sheet of the heap; then, three or four times takes up as much water as he can in the hollow of his hand, and throws it over the waste sheet, that it may moisten and soak downwards into the unwet part of the last division of the quire.

The paper being thus wet, he takes up the whole heap upon the paper-board, and sets it by in a part of the room, appropriated for that purpose, and lays another board upon it; and upon the middle of the board sets about half a hundred weight, and lets it stand by to press, commonly till next morning; for pressmen generally wet their paper after they have left work at night. All paper would be better if it were to be separated and turned in the course of the next morning, if it has been wet over night, and pressed again for seven or eight hours.

Knocking up Balls.

Pelts are used for this purpose, and such are chosen as have a strong grain, and the grease well worked out of them. They are purchased either wet or dry; if dry, they are put to soak in chamber-lye. One skin generally makes two proper sized balls. When the skin has soaked sufficiently, which will require about fourteen or fifteen hours, it is taken out of the lye, and *curried*; that is, by putting the skin round the currying iron, or any upright post, and taking hold of each end of it, and

drawing it with as much force as possible, backwards and forwards, against the post, which discharges a good deal of the water and lime, and renders it more pliable; he then cuts the skin exactly in two, and puts them under his feet, and continues to tread them till he is unable to discover the smallest particle of water, or till it sticks to the foot in treading. The skin is then laid on a wetting board, or a vacant press stone, and *stretched*, by rubbing the ball stock on it, as much as possible. He then places a lining, (which is a worn-out skin, and which has been previously soaked, but not trodden,) on the skin, and nails them with one nail to the ball stock; he then proceeds to lay the different cardings of the wool one upon the other, crossways, till he has sufficient for the ball; he then takes it up by the bottom corners, and *grasps* it into a circular form, with which he fills the ball stock, then brings the skin opposite the part already nailed, and *makes* that also fast with another nail. He then puts two nails immediately opposite each other between the fastenings already made, and proceeds to put the skin in plaits, about an inch wide; through each plait a nail is driven; the superfluous skin should then be cut off within half an inch of the nails. Balls are well knocked up when the wool is so placed as to form a full even face, *that* every part of the skin may bear upon the letter; not rising in hillocks, or falling into dales; not having too much wool in them, for that will render them soon hard and uneasy for the pressmen to work with; or too little, for that will make the skin, as the wool *settles* with working, *soon flap*, and wrap over *into* wrinkles, so *that he cannot so well distribute the ink on his balls.*

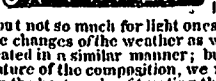


Having knocked up the balls, he dips them into the chamberlye, and immediately scrapes them with the ball knife, in order to make them perfectly clean; he then procures a clean sheet of stout paper, and puts it on the ball, and continues rubbing and patting it till the ball is perfectly dry, which is considered in that state when it will readily take the ink on every part of it. Having thus dried the balls, he proceeds to take ink; but if he finds that scarcely any of the skin is *black*, they are not sufficiently dry; he then returns again to drying it with paper, or burns a piece of waste paper, and waves his ball to and fro over the flame of it, but so quick and cautiously that he neither scorches the leather nor dries it too much: in winter time, when a fire is at hand, he dries it gently by the *fire*. *If* the balls are greasy, they should be frequently rubbed up with the pelt blankets, and well scraped; and dried, as before, with paper.

We have introduced the foregoing account of the pelt balls, not only because several printers still continue to use them, but in order to shew the alteration which has taken place in this respect. About the year 1815, composition balls were introduced at Weybridge, by Mr. B. Foster, a compositor: upon their introduction into London they were opposed by some masters and also by many pressmen, but they gradually came *into pretty general use*; there are yet a few who still adhere to the old mode. *These* balls are made of molasses, glue, and a portion of tar, which are boiled together to a proper consistency,

it is then poured upon a piece of cloth, and when sufficiently cold is knocked up according to the rules before laid down; by this means the nuisance of the pelt pot and its attendant filth is dispensed with. Should these balls be hard, when dirty, they may be washed with a little weak lye, and rinsed with water; if soft, a little ink might be put on them, and then scraped: but the pressman must use his own judgment in this respect, because composition will vary so much from the boiling, and likewise the weather, that no decisive rule can be laid down.

In 1814, the Times newspaper was first printed by a Steam Engine, consequently, from its being a cylindrical power, rollers were indispensably necessary; these were made of a composition of molasses, glue, and tar, as before observed; in the following year the composition balls were brought into use; and in 1819, hand rollers were introduced to the notice of the profession, which very rapidly came into general use, and are likely to continue: they are manufactured of composition similar to the above, and are made in the form here shewn; they are excellently adapted for heavy forms, but not so much for light ones: they are likewise subject to the changes of the weather as well as the balls, and should be treated in a similar manner; but as they vary so much in the nature of the composition, we recommend the pressmen to study the best mode of treating them, as no general rule can here be laid down.



Printing Red, or other Colours, with Black.

When red and black are to be printed on the same sheet, as in Moore's, and other almanacks, the form is made ready in the usual way, and a line traced all round the outside of the chase on the stone with chalk, or any thing that will accurately shew the exact situation in which the form must be placed after it has been taken off the press. The pressman then pulls a sheet in order to get those words or lines marked, which are to be worked red; while this is doing he washes the form thoroughly, as the least dirt remaining on it will destroy the beauty of the red. The form is then laid with its face downwards on a letter-board covered with a press-blanket. Those words marked to be red are then forced down, (which the soft and spongy nature of the blanket readily admits of,) and Nonpareil riglets nicely fitted into the vacancies, which raise the red lines and words all of an equal distance from the other matter. A sheet of paper is then pasted on the form, which keeps the Nonpareil underlays in their proper places. The form is again laid on the press, observing the utmost care in placing it agreeable to the marks before made on the stone. It must then be made perfectly fast to the corner irons, as it is highly important that it remain firm and immoveable during its stay on the press. The frisket (which is covered with parchment,) is then put on, the form beat over with the red balls, and an impression made on it. The red words are then cut out with a sharp-pointed penknife, with so much nicety as not to admit the smallest soil on the paper from the other matter.

The red being finished, and the form washed, the compositor unlocks it, (which is best done on the imposing stone, as the pressman can easily lay it agreeable to the marks made on the press,) and draws out the red lines, and fills up the space with quadrats. When this is done, the pressman cuts out the frisket for the black. An extra pair of points are used to prevent the black from falling on the red, which is termed *riding*. When a very extensive number is to be printed, two forms are generally used, one for the red, and another for the black. There is another method of placing the underlays, which is adopted for broadsides, &c. with large letter, and with perhaps only two or three lines of red in them. The red lines are taken out on the press stone, and the underlays put in with a bodkin, upon which these lines are placed, and the frisket cut out as before-mentioned.

The custom of printing broadsides, &c. with various coloured inks having become so very much into general use, has induced some of our ink makers to turn their attention to the manufacture of coloured inks; consequently the printers can now be supplied with that article without the delay and labour of making. Composition balls are also an additional advantage in the working of colours, from the easy manner in which the colours, except black, are removed off the balls; this may be done either by washing with a little lye, if hard, or scraping with soft varnish or spirits of turpentine, if soft.

Mixing and grinding Colours with Varnish.

Varnish is the common menstruum adopted for all colours in printing. Red is the colour generally used with black. Vermillion, with a small portion of lake, produces a beautiful red, which should be well ground with a muller on a marble slab, till it be perfectly smooth. If it be in the smallest degree gritty, it clogs the form, and consequently produces a thick and imperfect impression; no pains should therefore be spared to render it perfectly smooth; it may then be made to work as clear and free from picks as black. A cheaper red, but not so brilliant, may be prepared with orange mineral, rose pink, and red lead. The Prussian blue makes also an excellent colour, and will require a good deal of time and labour to render it perfectly smooth. It is also ground with the best varnish, but made considerably thicker by allowing a greater portion of colour with the same quantity of varnish, than the red; it will then work clear and free from picks. As this colour dry's rather rapidly, the balls will require to be frequently scraped.

Other colours may be made, viz. lake and russet, which produce a deep red; verditure and indigo, for blues: orpiment pink, yellow ochre, for yellows; verdigrease and green verditure, for green, &c. All these colours should be ground with soft varnish, being in themselves dryers, or they will so choke up the form, as to require it to be frequently washed, as well as dry and harden the balls, and so render them useless.

The best colours for printing are those of the lightest body and brightest colour.

Boiling lees, made of American pearlash, should be used for washing the forms.

Rules and Remedies for Pressmen.

It is the business of the pressman to pull proofs whenever they are wanted. In most offices of any extent, an empty press, called a proof press, is generally placed in some part of the composing room. The slovenly manner in which proofs are too often pulled, cannot be sufficiently reprobated. It is the duty of the corrector to notice whatever appears faulty or defective in the type; consequently, upon dirty, or almost illegible proofs, the marks will be numerous, and the trouble and loss of time to the compositor great and vexatious. This is not the greatest evil: the most careful and attentive reader will not, in such proofs, be able to discover faults, which, if he but glance his eye over the sheet at press, will so stare him in the face, as to make him almost involuntarily cry out, with Macbeth—

"Thou canst not say that *I* did it!"

No proof should be received by the reader, that has not been pulled perfectly clean and legible; the pressman would then be obliged to take some pains in this respect. After a proof has been made, the form should be well rubbed over with clean lye.

About every three sheets a small quantity of ink should be taken, and during the intervals the beater is not employed in brayering out or taking ink, he should be overlooking the heap in order to detect any want of uniformity in the colour; to observe if any letters, quadrats, or furniture rise: that no letters are drawn out, or battered; that the register be good, and the work free from picks: during this examination, the balls must be distributed as much as possible. When, through carelessness, too much ink has been taken, it should be removed by laying a piece of clean waste paper on one of the balls, and distributing them till the ink is reduced to the proper quantity. If letters, quadrats, or furniture, *rise up and* block the paper, they should be put down with the bodkin, and the quarter locked up tighter. If any letters are battered, the quarter they are in must be unlocked, and perfect ones put in by the compositor. When bearers become too thin by long working, they should be replaced by thicker ones. When the form gets out of register, which will often happen by the slurring of the quoins, which secure the chase, it must be immediately put in again, as there can scarcely be a greater defect in a book, than a want of uniformity in this particular. If picks, which are produced by bits of paper, skin, or film of ink and grease or filth, get into the form, they are removed with the point of a pin or needle; but if the form is much clogged with them, it should be well rubbed over with clean lye, or taken off, and washed: in either case, before the pressman goes on again, it should be made perfectly dry by pulling a waste sheet or two, in order to suck up the water deposited in the cavities of the letter. The puller should habituate himself to glance his eye over every sheet, as he takes it off the tympan; this may be done without retarding his progress; by following this plan, he will be enabled to detect imperfections which may escape the beater. In order to ensure uniformity in receiving ink from the block, care should be taken to brayer out at the edge of the block, small quantities at a time. While this is doing, the balls must rest on the ball-rack, with the right hand on the upper ball-stock handle. Torn or stained sheets met with in the course of work, are thrown out and placed under the bank; but the pressman should be particularly careful to have them supplied by others from the warehouseman. Creases and wrinkles will frequently happen in the sheets, through

careless wetting of the paper; these should be carefully removed by smoothing them out with the back of the nails of the right hand.

In tiveives, and other works where the plattin pinches twice upon the centre pages, doubling frequently happens; the following, among many others, are the causes of, and remedies for this evil. It happens when the face of the plattin and the inner tympan are both dirty, which occasions them to stick; they should always be kept perfectly clean. Slack or rickety tympans will also cause doubling; and leaning the body against the carriage in reaching the bar, in presses without guide-cramps, and in those also where these cramps do not act with truth. The nut being loose in the head will also occasion this defect; the short bolts should be screwed up as tight as possible. If the plattin be slack, or otherwise improperly tied up, this defect will always happen; also doubling will happen from the following causes, which must be remedied by the joiner and smith; viz. when the tenons of the head are so narrow as not to fill the mortises in the cheeks. The nut and garter so worn as not to admit the spindle to work close in them. The hose not working easy and steady in the shelves. The wheel on the spit not well justified, and its having too much play in the ear, which causes an unpleasant clack. The paper being either too dry, will also sometimes cause the impression to double. Slurring and mackling will frequently happen when the tympans are carelessly and suddenly put on the form; they should always be laid down easy, and the slur-screw made use of. Leaning against the carriage, as before-mentioned, will also cause a slur. If the plattin rub against the rail of the tympan, it will inevitably cause a slur and mackle. This can easily be remedied by moving the tympans so as to clear the plattin. The ear of the frisket being so long as to cause it to rub against the cheek, always produces a slur; this can be prevented by filing off a part of it. Loose tympans will at all times slur the work; great care must therefore be observed in drawing them perfectly tight. Independent of the above causes, slurring and mackling will sometimes happen; it will be better in this case to tie as many cords as possible across the frisket, which will keep the sheet close to the tympan.

Before the pressman leaves his work, he covers his heap. He first turns down a sheet like a token sheet, where he leaves off, then puts a quantity of the worked-off sheets on it, taking care to have the printed side upwards, that his companion, if he have any, on coming to work first in the morning, may not be deceived in taking for the reiteration. Laying the blanket on the heap, after leaving off work, is a bad custom. If the paper be rather dry, it will be better to put sheet wrappers on it. The blankets should always be kept as dry as possible, that they may not make the inner tympan damp and slack.

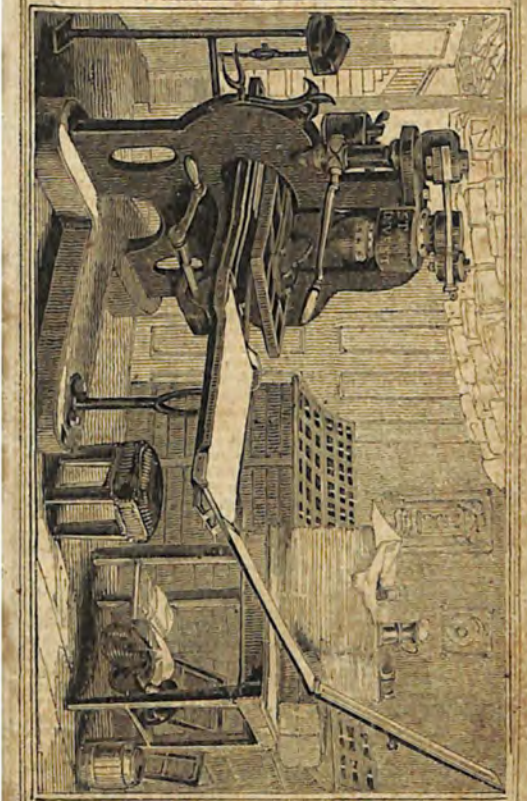
The pressman's next care should be to look after his balls. They should be well rubbed with a blanket soaked with chamber-lye, if they are inclined to be hard, that they may be in proper order for the next day's work. They must be left well covered up with blankets; but if they are already sufficiently soft, they will not require rubbing, and what is termed a dry blanket will answer the purpose, viz. one from which the water does not run. When the balls have been over-soaked, they should be left on the rack all night, with merely a piece of paper round them, as they will not bear the process of what is termed capping.

The pressman next observes whether his form be clean; if so, he puts a sheet of waste paper between the tympan and frisket, and lays them down on the form; if it be dirty, it must be rubbed over with clean lie. On his return to work in the morning, he takes care to wet the tympan, (but not for very light work). If there should happen to be any pages in the form particularly open, those parts of the tympan where they fall must not be wetted.

THE STANHOPE PRESS.

This press is the invention of the late patriotic nobleman whose name it bears; who after many expensive and laborious experiments, at length succeeded, with the assistance of an ingenious machinist (the late Mr. Walker) in bringing the press to a state of perfection. The first press was finished in the year 1800, and its powers were tried at the office of Mr. Bulmer, (the Shakespeare Press) in which house it at present remains. They have undergone several alterations since the first of them were made, particularly in the rounce, and the ribs; the handle of the former was attached to a rod which crossed the plattin, this rod was connected with the spit by means of machinery; the carriage, instead of running on cramps in the ribs as at present, was carried upon wheels on a straight edge, which made a very disagreeable noise; the gallows for the tympans is also removed, and the bearings are attached to the ends of them. At first they were very apt to break in one part or the other, particularly in the staple, which was at length discovered to have been cast too weak to bear the extraordinary power applied; this evil was afterwards remedied, by casting them considerably stouter; since which they have maintained their character for being excellently well adapted for the purposes of printing, as well as being durable, and not likely to get out of repair, provided they are kept clean and well oiled, which are the most essential requisites, not only for this, but also for all kinds of machinery.

His Lordship having objected to the taking out of a Patent for his invention, it was consequently thrown open, upon which several Engineers and Smiths began to manufacture presses on the same principle; it is true some of them made trifling alterations, but in truth they were scarce worthy of notice; therefore, in order to find a market for them, they sold them somewhat cheaper; but we can assert, without fear of successful contradiction, that those from the original manufactory were infinitely superior to what were made in other quarters: the idea of saving induced many printers to purchase them; but we are firmly persuaded that they have long ago had reason to regret (from their so often being out of repair, &c.) their over-anxiety for cheap, and, as we have before observed, slovenly manufactured articles: however, we must in justice admit, that the presses manufactured by Mr. Brooks, (who for several years was considered as one of the best workmen in the original concern), are in every respect equal to those made at the last-mentioned establishment. We shall now introduce to our readers an engraving of the Stanhope press, and feel strongly persuaded, that every one will allow it to be the best representation of this machine that has ever appeared before the public.

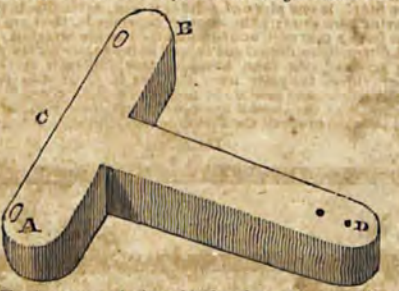


Notwithstanding the very extraordinary power of the Stanhope Presses, when contrasted with that of the wooden ones, still we must observe, great as this power unquestionably is, yet on one occasion we found that it was not at all adequate for what was required, we allude to the printing of the wood engraving of the *Assassination of L. S. Dentatus:* at the press from which our subject was taken we attempted to pull a proof; the block was well beat over and ink twice taken, a damp piece of India paper was laid upon it and a blanket, with a second one inside the tympans, when the bar was well pulled down by two men for several seconds, with all the power that could be applied to the press; but to our utter astonishment, we found little more than would have appeared from a plain block; this impression is now in our possession; at length, after considerable labour, and the greatest risk of breaking the press, we obtained a few inferior impressions, by means of three blankets, and other expedients: we have no hesitation in stating this to have been the greatest power ever applied to a Stanhope Press.

This press consists of the following parts, which are thus put together; The *Tee, Staple, Rounce,* Ribs, Standard, Main Screw, Short Head, Arbor, Top Plate, Long Head, Coupling Bar, Piston, Back Plate, Ears, Balance Weight, Bar, Plattin, Table and Tympans.*

The Tee.

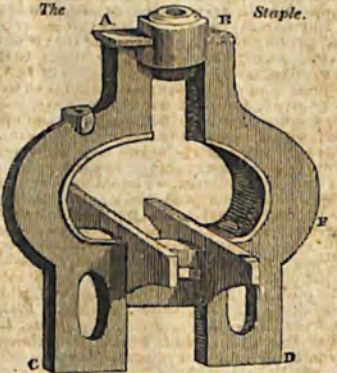
A to B, 3 ft. 0 in. C to D, 3 ft. 7 in. Height 8 and a half.



The Tee is composed of two blocks of wood screwed together at one end, in the form here represented; there are four holes in the upper part, two in the long, and two in the short piece; the two first are to fasten the Staple, and the other two the Standard, or Fore stay.

* The spit of the Rounce fits on the Ribs before they are screwed on.

The A B *Staple.*



A to B,	0 ft. 16 in. and a half.	C to D.	2 ft. 9 in. and a half.
E to F,	3 4	Height,	3 11

The Staple is one piece of solid cast iron, agreeable to the engraving here shown; the arms, or bearings for the impression also form a part of it, and to which the ribs are attached: there are fifteen holes drilled and tapped in the Staple for the following screws; ribs four, knuckles four, ball-rack three, ink-block three, top-plate one: the box is fitted into the top of the Staple, and held up by means of a collar screwed on it; the inside of the cheeks are bevelled off *from* back *to* front, and polished to admit the Piston to work freely between them.

The Ribs.

Length . . . . 5 ft. 3 in. Width . . . . 10 in.

The Ribs are fluted so as to admit the cramps to run freely into them; they fit on the arms between the projecting pieces, and are fastened by four screws, and also by two others on the top of the standard; they are likewise secured at each end by cross pieces, which are screwed on them with leather between, to prevent the oil from escaping out of the grooves of the ribs.

The Standard, *or Fore-stay.*

Length, from A to B, 17 in. Width, from C to D, 10 in.

The Standard is made in the form of a fork, as here represented; it is rivetted into an oval piece of cast iron, and through it are two holes by which it is fastened to the long part of the Tee: at the top of the fork are two through which two screws are passed into the sides of the ribs and by which they are kept steady.

The Main Screw.

Length, A to C, 3 in. C to B, 10 in. D the centre.

The Main Screw is thirteen inches long, three inches of the upper part is made hexagonal, or six square, to admit the short head, and through which a pin is fixed to keep them together; at the lower end is a garter, on which the collar of the piston works, and at the bottom is a hole to receive the plug of the upper centre, as represented by the dotted lines: the screw has two threads, which of course commence at opposite angles; in putting it into the head, great care is required that the threads commence the right way, otherwise the short head will not fit in its place so as to work with the coupling bar; consequently it must be taken out again, and without the greatest caution they are liable to fall into the same error: before the screw is put into the box, the collar at the top of the piston must be placed so as to screw on when the latter is put up.

The Short Head.

Length, from A to B, . 8 in. Width, . . 4 and three quarters.
Depth, ... 2

The Short Head is a piece of cast iron, in the centre of one end is an hexagonal hole made to fit exactly on the top of the main screw, through which passes a pin; the other end is separated sufficient to admit one end of the coupling bar to work in it; holes are made for a substantial steel bolt to pass through both these projections, upon which a nut is screwed on the bottom; this bolt secures one end of the coupling bar.

The Arbor.

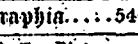
From A to B, 1 in. and a half. B to C, 5 in. C to D, 4 in.

The Arbor is a round cast iron pillar, fourteen inches and a half long; one inch and a half from the bottom is a round projection, through which is a hole to admit the bar, on which a nut is screwed on the opposite side: four inches from the top is a collar, on which rests one end of the top plate: the arbor is made hexagonal above the collar, to admit the long head, which is also fastened on with an iron pin.

The Top Plate.

Length, from A to B, 8 in. Width, 3 in. and a half.

The Top Plate has two holes in it, one to admit the upper part of the arbor, through it; and the other is for the screw which fastens it to the top of the staple; part of the plate being cut away to fit exactly on the last mentioned; and by which means it appears to form a part.



The Long Head.

Length, from A to B . . . 9 in. and a half.

The Long Head is cast somewhat like that of the short one; only with this difference, the front projection rises a little above the top, which forms an arbor, or cheek, to the coupling-bar, when the pull is made; the latter having to pass over the top of the long head and arbor. The other end of the coupling bar is attached to it, as before described, in the short head.

The Coupling Bar.

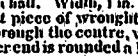
Length, A to B, 15 in. and a half. Width, 1 in. and three quarters.

The Coupling Bar is a flat piece of wrought iron, made round at one end, with a hole through the centre, which is connected to the long head; the other end is rounded a little with a square head, through which by if the power is regulated: this presses against a washer which fits in the oblong hole, and through the screw that connects the bar with the short head; there is also a projection on the side which checks against the arbor in the long head, when the pull is made.

The Bar and Handle.

Length, 21 in. Shank, 3 in. & three quarters. Handle, 5 in.

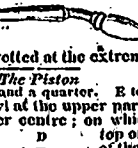
The bar is shaped somewhat in the form here represented, the shank fits into the hole in the circle on the arbor, and is screwed fast at the end; the handle is made of wood, and rivetted at the extreme point.



The Piston

A to B, 17. C to D, 12 in. and a quarter. E to F, 5 in. and a half.

Is of cast iron, with a bowl at the upper part, at the bottom of which is placed the lower centre; on which the upper one works: the inside of the top of this bowl is tapped to receive the screw of the collar which rests upon the garter of the spindle; the bottom of the latter is completely enclosed in the bowl when the Piston is put up; on each side, just under the collar are two small knuckles, which rest upon the ends of the balance iron, and by which the piston and plattin are raised up after the impression is made; the sides are bevelled off, and made to fit exactly against the bevels on the inside of cheeks; a hole is tapped at the back to receive the screw which draws the piston close to the back plate: the four holes



on the oval aro for the screws which secures the plattin to the piston.

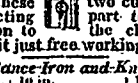
The Back Plate.

The Back Plate is a square piece of cast iron cut away in the centre of the upper part, so as to clear the bowl of the piston, and the centre of the lower part is cut through to admit the projecting piece which strengthens the oval part of the piston: between these two cuttings away a hole is made through a projecting part to admit the screw which draws the piston to the cheeks of the press, leaving it just free working room.

The Balance-Iron and Knuckles.

Length of arm . . . . 10 in. | Fork . . . . 5 in.
Width of do. . . . . 5 and a half.

The Balance Iron is made in the form here represented, with the knuckles attached; there are two holes in each, which are screwed against the cheeks of the stasocket to admit the ple, and a hole on each fork project under the oil; the points of the the piston, which studs at the sides of plattin: on the arm is draw up that and the which the weight is hung, a screw on the top prevents its moving a sliding hook, on from the friction.



The Balance Weight

Is of solid cast iron, with a groove across the top; in the centre of which is fixed an eye for the hook on the arm of the fork; this weight is sufficient to cause the bar to return after the impression is taken.

The Plattin.

Length, A to B, 2 ft. 2 in. Width, B to C, 1 ft. 8 in. & a half.

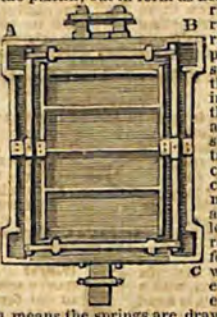
The Plattin is a square piece of cast iron, about two inches deep, it is cast with holes, as here reprecented; which are in some cases about an inch and a half deep, consequently the plattin is only about half an inch thick; but in others they are made much stoutcer; the oval in the middle, is made to correspond with that of the piston, on which it fits, and they are fastened together by four screws which pass through the oval of the piston into the plattin; the surface of which being turned off in a lathe to the greatest exactness, so that it should bite a thin piece of paper, or oven a hair, when laid upon the table.

The Table.

Width, A to B, 2 ft. Length, B to C, 2 ft. 5 in. and a half.

The upper part of the Table is turned off in a lathe to the greatest truth, so that the plattin, when laid upon it, ought

to bite a single hair in any part; the corner irons are afterwards screwed on, together with the projecting pieces at the ends, to which the girths are fastened by means of slides and screws; the shanks of the screws to the tympan joints have two long holes made in each, through which screws pass, and the nuts are put on the outsides, by which the tympans are raised or lowered at pleasure: the table is cast with holes, somewhat resembling the plattin, but in form as here represented:



the table is carried by four steel cramps, which run into the grooves of the ribs; these cramps are on pivots at the ends of the springs, which are secured in the middle (near the sides) by two iron plates and small screws; the extremeends of the springs are tapped so as to admit four screws, which pass through the table and the springs, to receive a nut, which acts as a check, to keep the screws from moving when set: these screws are for the purpose of rasing or lowering the table, as occasion requires: this operation is performed by turning the screws which are let in at the four corners of the table; they are screwed tighter to lower it, by which means the springs are drawn closer to the under part, and the table consequently sinks at the corner or corners altered; to raise it the screws are slackened, when the springs expand, and the table of course rises: it should be recollected that the nuts must be screwed up after the table has been lowered, and loosened before the screws are slackened to raise it, otherwise they will be liable to injure this part of the press: the inside white lines, which run parallel with the springs, are the bearings which meet the arms on the staple when the pull is made, at which time the springs give way, they having sufficient play for that purpose: the carriage should be so raised that the two bearings should be about the eighth of an inch apart (when they are brought one over the other) before the impression is taken; they should be carefully examined in this respect, for it sometimes happens, when the screws are drawn up very tight, that the ends are apt to project so much below the springs as to rub against the staple, as well as the bearings to strike or graze each other in running in, either of which consequently jar the carriage, and cause the work to slur.

We flatter ourselves that the foregoing brief description of this valuable press, which has hitherto maintained its character for being well adapted for the purposes of printing, will enable every pressman not only to put them together, but also to take them to pieces and clean them when necessary, which is of the utmost importance.

NOTWITHSTANDING we had presses made by several individuals on the Stanhopean principle, which were considered fully adequate for every purpose, yet some persons were induced to bring forward others, in the expectation of sharing the profit arising from what was generally considered a lucrative employment: the first of these was invented by a German of the name of D'Eighn, which was known by the appellation of

THE SECTOR PRESS.

This press was much like the Stanhopean in formation: the principal difference consisted in its having *Sectors* instead of the *Screw*, and also in its having a large screw through the head, for the purpose of regulating the power, in place of its being at the end of the *Coupling Bar*, as in the Stanhope; this we consider as no improvement, because it was not so readily turned; neither where the *Sectors* of that advantage, for it not unfrequently happened that they would fly from the great pressure. Mr. D'Eighn afterwards disposed of his patent-right to a person of the name of Golding, who continued to manufacture them for some time. He then invented another press, and soon afterwards died, when his widow disposed of the patent to Mr. Cogger.

THE field was next entered by a firm of the names of Cogger and Scott, their press was denominated

COGGER'S PRESS.

They were composed of two upright pillars of wrought iron, upon which the cast iron head was screwed: it had *Sectors*, and a *Screw* on the head for regulating the power, similar to the first patent; the *Plattin* is secured by two rods, which pass through the *Head* and *Till*, and are fastened to the *Plattin* by two small pins; and by which the *Plattin* and *Bar* are returned by the power of the two *Spiral Springs* which pass over the rods, and are screwed down to the *Head* by nuts on the top of the rods; the power is given by compound levers, after the manner of the Stanhopean: a great objection in these presses arises from the insecure manner of the *Plattin*, which is by no means so effectually secured as it ought to be; we have known them to shake by the power of a person's single hand; they have a great quantity of ornamental brass work, which give them a pleasing appearance to the eye, but it is not the glitter of guady tinsel that a practical printer wants.

THE next that came forward was Mr. Ruthven, a Printer, at Edinburgh, he materially differed from all his predecessors; his was stiled

THE RUTHVEN PRESS.

This press occupies less room than any of the former, being nearly square, the *Table* of which is stationary, and the *Plattin* is drawn over by the hand, being supported by two iron springs, under which are four brass bevelled wheels,

which run on two pieces of bevelled steel: and when the impression is taken the springs give way, and consequently rise afterwards: through the *Head*, on the inside of springs are two bolts with screws on the top, and headed on the sides below; these heads slide into two *Dogs*, which are drawn down by the machinery underneath; nuts fit on the screws on the top of the *Head*, by which the power is consequently regulated: the works underneath, which are certainly very complicated, consist of an *Elbow Piece* with three holes; one fits to the *Cheeks*, one for the *Levers*, and the other for the *Coupling Bar;* the *Levers* are bolted to the *Cheeks* at each end, and a few inches inwards are attached the *Dogs*, which receive the side-headed bolts; when the *Elbow Piece* is drawn by the *Coupling Bar*, the *Levers* are forced down which brings the *Dogs*, and consequently the *Plattin* along with them: a bar with a weight at the end, which presses against the *Elbow Piece*, forces the *Levers* and *Dogs* up, after the impression is taken; they unquestionably possess great power: but we object to these presses on account of the action of the *Bar*, which is forced down by the pressure of the left, or by both hands: a man may sprain his wrist, or should his hand slip off, the rising of the *Bar* would of course injure his arm between the latter and the press; also, from the very confined position of the works, it is almost next to an impossibility to oil or clean them without taking the press to pieces, which is a very troublesome and disagreeable operation.

Dr. Church, a native of America, followed the Columbian: his plan differs from every other; the *Table* runs upon wheels on a straight edge, the *Plattin*, which answers the purpose of the *Tympans*, is jointed to the *Table*, and is connected to the *Head* by means of three *Cranks* from the centre of the *Head* and *Plattin*; the *Frisket* is jointed to the upper end of the *Plattin*, consequently, when the carriage is drawn out, it raises the *Plattin* by the check of the *Cranks*, which, when brought to the full stretch, give way, and let the *Plattin* fall gently over, into the position of a pair of *Tympans;* instead of girths, the *Rounce* has a chain, by which it is forced in and out, by which means the *Cranks* are brought parallel between the *Plattin* and the *Head*, and the impression is given by the forcible check of the *Rounce*. We were informed that the chain was very liable to break from the force of the sudden check necessary to produce any thing like an impression; we must freely confess, that the work which we saw the press engaged upon, was certainly below mediocrity; it is true it was but common work; therefore, we consider that he has failed altogether in producing a press worthy of notice. But it is quite of a piece with his other fancied improvements in printing: Dr. C. must imagine that he can cram John Bull with any thing

after the statement of his boasted machine, which was not only to cast and dress the types, but also to compose them; and afterwards print off the forms. We profess to know nothing of this boasting Theorist's plans, more than what was stated in the Public Prints: from which it would appear, that the whole of these operations were to be performed in the most easy and simple manner, which would require no more exertion than that of a person playing on the Piano; and so expeditiously was the whole business to be performed, that the types were to be re-cast each time, instead of being distributed in the usual manner. Now, is not such an improbable statement an insult to common sense? and we wonder much, that the Gentlemen who conduct the Public Press should so far insult the understandings of their readers, by laying such nonsense before them; unless it was to show the folly of this American Theorist.

THE next which comes under our notice is one invented by a person of the name of Russell; they are manufactured by Messrs. Taylor and Matineau: this is denominated

THE RUSSELL PRESS

These presses are simple, and easy to work. On the top of the *Plattin* is screwed a piece of iron, with grooves at each end, which extend from one side of the *Staple* to the other, between which it works; in the centre of the *Plattin* is a projection with a hole in the middle, into which fits a kind of wedge; the top has a corresponding hole, in which is a piece similar to the last-mentioned; this is met by one that passes through the *Head*, on the top is a regulating screw, which presses against the wedge through the head; behind the lower top of the wedge is a projection, on which is bolted a kind of swivel, that is joined to the *Coupling Rod;* two iron rods are screwed to the *Till*, on the top of each is a hook and a link; there are two projecting pieces from the back part of the *Head*, on which rests the *Balance Iron*, the points of which take the links at the top of the rods, and the weight draws up the *Plattin;* a piece of iron is screwed on each side of the front of the *Staple*, which forms an angle, just leaving the *Tympans* room to rise and fall: the point of it is hollow to admit the *Bar* and *Coupling Rod* to work; the latter is attached to the former by means of a pin, and the *Bar* is fastened to the projecting piece by a bolt, the eye of the *Coupling Rod* works close round that of the *Bar*, when the wedges are drawn perpendicular, and thus the impression is given; on the return, they fall into the position of two cranks; the lower wedge naturally presses strongly against the part next the front of the *Plattin*, consequently it comes down first, and rises last, the *Plattin* is necessarily somewhat loose; they bear a good character at present, but we question if they will not slur when the work begins to wear, from constant friction.

THE COLUMBIAN PRESS.

For the Press we are now about to introduce to the notice of our readers, we are indebted to the ingenuity and talent of Mr. George Clymer, of Philadelphia, in North America, who, after having manufactured a supply of them for our trans-Atlantic brethren, arrived in this country, in 1817, to introduce his press to the Printers of Europe, which had given such universal satisfaction to those connected with the Art in that portion of the Globe. The highly favourable, and very flattering testimonials which Mr. Clymer produced on his arrival in London, from the gentlemen connected with the press in different parts of the United States, where they had been in active operation, clearly evinced to the Printers of Great Britain and Europe, that his invention was well deserving their countenance and encouragement; and, notwithstanding they had presses not only of the Stanhopean manufacture, but also of several others, yet the properties of Mr. Clymer's Columbian Press, supported by the above testimonials, was the immediate cause of their introduction into several of the first houses in the Metropolis, and many of the others soon followed; they were also introduced into several of the first Printing-offices on the Continent, and we sincerely hope that Mr. C. has been handsomely remunerated from them for his ingenuity and ability. We have two of these presses now in use, and we flatter ourselves, notwithstanding the very numerous and highly-respectable Testimonials received by Mr. Clymer from the Printers of Great Britain, that we have put the Columbian Press to a much greater test, with respect to power, than any of the printers in Europe,* or even the United States: we allude to the printing of the very elaborate and most extraordinary Engraving on Wood, executed by Mr. William Harvey, of

THE ASSASSINATION OF L. S. DENTATUS;†

* There is one instance of a Columbian Press having a similar extraordinary power to the one above alluded to; it was made for Mr. John Whittaker, of Queen Street, Westminster, for the express purpose of printing a most singularly splendid work in letters of gold, of the august Ceremonial of the Coronation of his most gracious Majesty, George the Fourth; two parts of it are now published, which reflect the greatest credit on Mr. W.'s skill and judgment in this singular department: so great was the power required to produce fine impressions of the pages in gold characters, that Mr. W. actually broke the long side of the Staple, just under the part to which the Bar is attached; and consequently required him to have a new Staple, at which press he is now proceeding with this curious production.

† This subject was drawn on the wood by Mr. W. Harvey, from a celebrated painting by Mr. B. R. Haydon, to whom Mr. H. was then a pupil. On this praise-worthy performance he incessantly devoted all the time that could possibly be spared, from his study and improvement in the Fine Arts, for the space of three years; but,

which, as we have before observed, could not well be proved at the Stanhopean, nor do we believe that any other press in use at that period (three years ago), would have been capable of giving the power required (the Columbian excepted) even with an additional leverage. In truth, however powerful and extraordinary the force of the impression given, when contrasted with other presses, and many of our brethren (in their recommendatory letters to Mr. Clymer) have represented it as being capable of printing the largest forms with the greatest ease, *even by boys;* in this instance we found it insufficient: far be it from us to decry, or even wish in the least to detract from the merit justly due to the Columbian Press; but, having a strict regard for truth, and being possessed of a thorough practical, and not a theoretical, knowledge of the machine and its powers, we humbly hope, that what we have now to state respecting it, will be received by all, as coming from minds that soar far beyond the reach of being biassed from the strict path of rectitude, by any occurrence that may ever take place. Having premised thus much, we shall now briefly explain the operation of printing the above extensive and most curious wood engraving. The size of the subject was *fifteen inches* by *eleven* and a *half*, which was composed of *seven pieces* of wood, through which passed four strong iron bolts with nuts at each end, to draw the wood close together as it shrunk; but even this did not prevent it, particularly in dry weather, and although the nuts were drawn up as tight as possible, still they would not force the wood close on the face, notwithstanding it was full up at the bottom; consequently we were obliged to take the bolts out and alter it, before we could proceed with the printing; this being done we next found that even the *Columbian Press*, of which so much has been said of its extraordinary power, was not

Reader, judge of his mortification and disappointment, when (after all this toil) it was a great question if it could possibly be printed in that style which would give general satisfaction, and consequently produce to him that remuneration which his genius justly entitled him to. As most difficulties are to be surmounted by perseverance and industry, so in time this was accomplished; but it is much to be regretted that the public, in appreciating performances of Art on wood, are little aware of the real difficulties attending their production: they judge of them as though they were produced in the same easy manner as copper-plates: but it is quite the reverse in every respect, and more is required of the printer than has generally been imagined: otherwise this performance of Mr. Harvey's would have received at least ten times the encouragement it has yet done: but we humbly trust that the admirers of Art will not omit examining it minutely, and grant the Artist that reward which is so deservedly his due. Mr. Harvey has declined engraving on wood, having determined to step into the upper walks of Art. Designing and Painting are now his principal employments, for which both his mind and his talents are equally qualified.

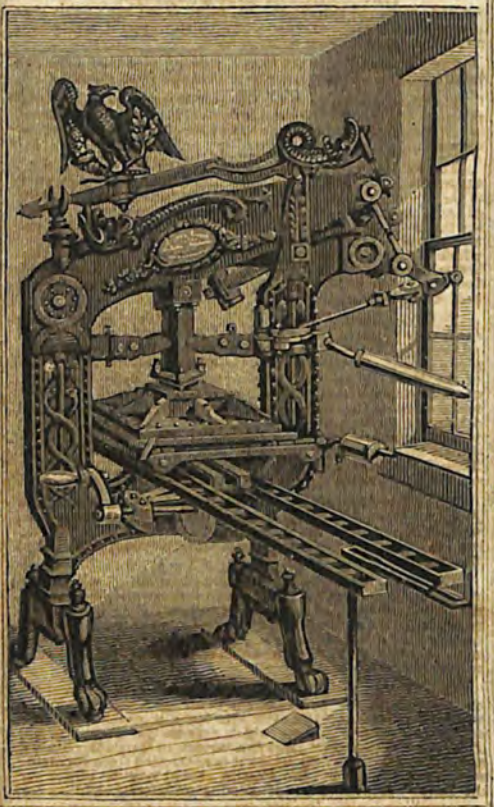
sufficient for this block; consequently we had a new *Bar* made, considerably longer than usual, which was so bent, that it just left sufficient room for the tympans to rise and fall, otherwise it went so far over, that a man could not conveniently reach it; even this had not the desired effect; so we next resolved upon having about two inches taken off the *Connecting Rod*, which enabled us to accomplish our object with respect to the impression; but, notwithstanding we had thus increased the power, we found it necessary to have *two stout men*, instead of *one boy*, as stated by many of our brethren, who little thought, when making such an assertion, that so extraordinary a power would ever be required for printing work of any description, at so powerful a machine as the *Columbian Press*. Having now gained sufficient power, we were next at a loss for ink which would answer the purpose; that of different ink-makers was then tried, but each failed in some respect or other; therefore we at length resorted to an expedient of mixing several of them together, which answered much better; but still that would not do, and we were then compelled to have recourse to an addition of some other ingredients, by which means it was at length accomplished. We are free to confess, that the very extraordinary power applied to the *Columbian* greatly exceeded our most sanguine expectation, and astonished every beholder---even Mr. Clymer himself, who declared that the press was never intended to have such a power: but we are proud to state, that the Engraving was printed without the least accident; and we can boldly assert, that no press can possibly produce better work than the *Columbian*; yet we do not consider them so well adapted for light jobs, as they are for heavier work; neither are they so expeditious as some others: the *Bar* is too far from the hand; from the quantity of levers, the *Bar* can never come down or return so quick, as where the power is gained by a simple motion.

Having now given our unqualified opinion of the merits of this valuable Press, we shall next present our Readers with an engraving of it on wood; and afterwards briefly describe the different parts and their actions, to enable pressmen to fix them up, or take them down, when they want cleaning, or removing.

This press is composed of the following parts: the *Feet*, *Staple*, *Ribs*, *Fore-stay*, *Rounce*, *Main Lever*, *Elbow-piece*, *Counterpoise Lever*, *Links*, *Table*, *Plattin*, *Piston*, *Cheek* or *Guide Pieces*, *Back Bar*, *Back-return Lever*, *Shoulder Piece*, *Bar*, *Connecting Rod*, *Eagle*, &c.

Having brought the *Staple* on, or near to the spot on which you intend to fix the press, then put the *Feet* (as marked) into their respective places, and raise the *Staple* upon them.

The *Ribs* should now be screwed to the *Staple*, and also the *Leg*, or *Fore-stay*, by which the near end of them is supported,



but the stay is not fastened to the floor; at the top of this stay is a projecting piece of iron, with a bolster upon it, which prevents the carriage from running back.

The *Rounce* is attached to the *Ribs* by means of caps and bolts, which are fastened to the projections from the *Ribs*.

The *Main Lever* must next be raised into its station: it is connected to the *Staple* by a strong steel bolt, which fits according to a small mark, and is pinned on the other side to prevent its working out.

The *Elbow Piece* is made in the form of two sides of a triangle; it has one square, and three round holes through it; that at the angle is the one which connects it to the projecting part of the long side of the *Staple*, in which is a mortise to receive it; this done, two holes will remain below, and the square one above; the centre round hole receives the bolt, on each end of which is the lower part of the *Links;* the lower hole is for the bolt which attaches the *Knob Piece* to the long end of the *Elbow Piece:* on the upper end of last-mentioned is the square hole for connecting the *Back-return Lever*.

The *Counterpoise Lever* (whereon stands the *Eagle*, which causes the return of the *Plattin* and *Bar*) works on two pivots on the top of the long side of the *Staple*, and rests upon a small piece of wood in the mouth of the dolphin, on the upper part of the *Main Lever*. The *Counterpoise* and *Main Levers* are connected by means of a short brass rod with a hook at one end and a screw at the other; the former fits into the mouth of the dolphin at the end of the *Counterpoise Lever*, and the latter passes through a hole at the end of the *Main Lever*, which is drawn up by a nut on the under side, and by which nut the *Main Lever*, and consequently the *Plattin*, are raised or lowered at pleasure, by screwing, or unscrewing this nut.

The *Links* fit on each side of the *Main Lever* and the *Elbow Piece*, to which they are attached by means of two steel bolts, which are pinned on the opposite side, to prevent their working out; by these *Links* the *Main Lever* is drawn down when the impression is taken.

The *Table* is an iron surface turned off in a lathe to the greatest exactness, with long cramps underneath, which run in the *Ribs*, and which act as bearers to the *Table* when the impression is taken; the girths from the barrel of the *Rounce* are fastened to projections attached to the *Table* in the usual manner; corner irons are screwed on as well as the tympan joints, as before described.

The *Plattin* is also turned off in a lathe so as to meet the even surface of the *Table:* in the centre is a high square, on which the *Piston* is fixed, with four holes to receive the ends of the side-headed screws which secure the *Piston* to the *Plattin;* ridges project from this square to the ends, corners, and sides of the latter, by which it is prevented from springing when the pull is made; the *Plattin* should now be placed on the *Table* with two pieces of wood about letter height under-

neath; the four side-headed screws are next put into their respective holes in the *Plattin* (as marked) and the small wedges placed behind to keep them in their stations: a square piece of iron, or pieces of sheet iron or tin are laid in the centre of the *Plattin* to increase or reduce the power. The *Piston* is now lifted on the small piece of iron in the centre of the *Plattin*, and the screws passed through the four holes in the former, and the nuts screwed on, which bind the *Piston* and *Plattin* together: care should be taken that the marked sides of the *Plattin* and *Piston* are both kept in the front. The *Table*, with the *Piston* and *Plattin*, is now run to the centre of the *Staple*, which will bring the upper part of the *Piston* directly under the trunion of the *Main Lever*, which is connected to the *Piston* by means of the caps and bolts attached to the latter. The *Plattin* must be regulated by the screws which secure the *Piston*, when a form is laid on.

The *Cheek*, or *Guide Pieces*, which the angles of the *Piston* slide through, and which keep the *Piston* and *Plattin* steady, fit on two projections from the insides of the *Staple*, and are fastened by four bolts with nuts and screws. The left hand one is tightened by means of a small key, or wedge, which passes between the projection from the *Staple* and the *Cheek Pieces;* on the right hand one is a piece of iron with a screw through it, which the *Elbow* of the *Bar* strikes against when the latter is brought down: this screw is for the purpose of partially regulating the power.

The *Back Bar* slides into two bevels on the back of the *Staple*, behind the *Main Lever*, which is for the purpose of preventing the *Staple* from springing, when the power is applied by means of the *Bar*.

The *Back-return Lever* fits into the square hole in the upper angle of the *Elbow Piece;* it has a small sliding weight which acts as a counterpoise to the *Eagle* on the top lever.

The *Bar* or *Shoulder Piece*, fits into two projections from the off side of the *Staple*, to which one end is attached by a steel bolt, and in the other is a square hole made to receive the end of the *Bar*, which is pinned on the inside: the middle of the *Shoulder Piece* is cast hollow to admit one end of the *Connecting Rod*, which is attached by a small bolt.

The *Connecting Rod* is made of wrought iron: one end has an eye, which fits between the hollow in the middle of the *Shoulder Piece*, through both of which pass a small pin; the other end is tapped to screw on the swivel attached to the *Knob Piece*, and by which, from the *Bar*, the whole machine is put into motion. It should be recollected, that one side of the eye is filed away to admit the *Rod* to vary a small degree from a right angle, otherwise it would not meet the swivel attached to the *Knob Piece*. To increase the power, take out the small bolt in the middle of the *Shoulder Piece* and turn the rod to the right; that is, take up the screw: to diminish it, turn the rod to the left, viz. lengthen the rod by unscrewing: the filed part of the eye must always be kept downwards.

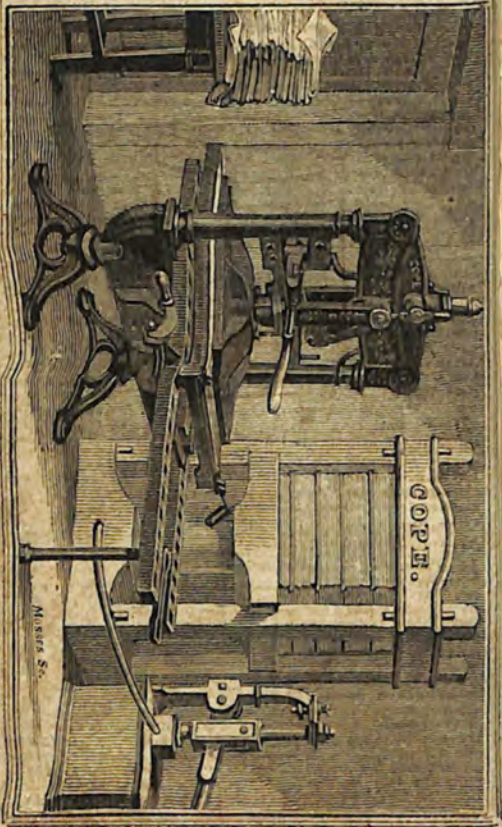
THE ALBION PRESS.

AMID the various descriptions of presses which have been obtruded on the notice of the profession, and which we have endeavoured in the foregoing pages briefly to explain; and having given our approbation of the Stanhopean and Columbian presses, as both well adapted to the purposes of producing fine printing, yet we are persuaded that most practical printers of this country will allow, that the meed of praise is justly due to the ALBION PRESS, invented by Mr. R. W. Cope, as being entitled, though last, to a place in the front rank in the list of presses, and that in every point of view: First, they are much lighter in respect to weight of metal: Secondly, the pull is very easy; notwithstanding which, it is equal in power to any of them, not even excepting the Columbian, of the extraordinary power of which so many high encomiums have been passed by the principal printers of Europe and the United States: Thirdly, it is better adapted for expedition, because the *Bar* is attached to the near cheek, and not the off one, as in the Columbian: Fourthly, there are so few parts belonging to it, and consequently the machinery is in itself so simple, that there is not the least chance of their being put out of order, or liable to the least accident from wear: Fifthly, the works being so simple, are all contained in the hollow of the *Piston*, on which the power is given. This is the first instance of an hollow *Piston* ever having been used for a press: Sixthly, the *Bar* passes over the *Plattin*, just sufficient to clear the rise of the tympans; consequently the *Bar-handle* is soon in the hand, and as soon out again, from the short evolution which the *Bar* has to traverse, it not being more than one-fourth of a circle; therefore considerable dispatch is given, which must be self-evident to every one who gives the subject the least consideration: of course we anticipate no objection to our opinion from those who are well acquainted with the mechanism of presses.

Mr. Cope also manufactures HYDRAULIC PRESSES* of all dimensions, the power from one to one thousand tons, and upwards; with the *Head* and *Bed*, or *Follower*, turned off perfectly true, similar to the *Plattins* and *Tables* of the printing presses: He likewise makes Inking Machines, with iron cylinders, for feeding the roller with ink, which are particularly well adapted for the purpose intended.

We shall now introduce an engraving of the *Albion Press*, (in the back-ground is a representation of an *Hydraulic Press,)* and then notice the principal parts of it, and their actions on each other.

* Hydraulic Presses were first introduced to the notice of the Public, (about fifteen years ago) by Mr. Bramah, Engineer, of Piccadilly: but at the expiration of his Patent, very considerable improvements have been made upon them, and they are now deemed a valuable acquisition to the printing profession.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It consists of the *Feet*, *Staple*, *Ribs*, *Rounce*, *Fore-stay*, *Main Steel Bolt*, *Piston*, *Links*, *Fulcrum*, *Brass Links*, *Spring Bolt*, *Spiral Spring*, *Cap*, *Coupling Bar*, *Plattin*, *Table*, *Cheek Pieces*, *Shoulder Piece* and *Bar*, *Regulating Screw*, &c.

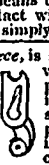
The *Staple* is one piece of cast iron, in form as here represented; the two round parts at the bottom fit into the *Feet*, by which it is supported: the projections on each side of the lower part are for the purpose of supporting the Ribs, and to which the latter are screwed; two of the pieces in centre of pillars are for the *Guide-pieces* which keep *Piston* and *Plattin* steady; the two on left hand side are for the end of the *Socket* for the *Bar* to work between, and which are attached by a pin, to these two pieces is screwed a bar through which passes a strong screw, against which the *Bar* strikes the *Socket* of when the impression is taken; the curve piece to the head is to give it more strength; the projection under the *Head* is called the *Trunnion*, which is cast in a particular manner, so as to resist friction against wear from the the top of the *Fulcrum*; above this is a *Slot-hole*, through which the *Main Bolt* passes when the *Piston* and *Links* are attached; it is made oval to admit the bolt to work up and down; on the top of the *Head* is another *Slot-hole* which meets the lower one, and through it the bolt goes which draws up the *Main Bolt*, by the force of the *Spiral Spring* through which it passes.

The *Ribs* are next attached, and fastened to the *Fore-stay*, has described in the *Columbian*.

The *Piston* and *Main Steel Bolt*: the former is of cast iron, as here represented; the circle at the lower part has four holes, through which pass the bolts and screws which keep the *Piston* and *Plattin* together; below is a spherical end which rests upon the centre of the *Plattin* and this presses on the latter when the power is produced; above are two upright pieces, through which the *Fulcrum* and *Links* work, and attached to the head of press by means of the *Steel Bolt*, passing through the *Piston*, *Links*, and *Slot-hole* in press head; the oval, or *Slot-hole*, is to admit the *steel bolt* to fall when the pull is made, and to rise afterwards by the force of *Spiral Spring*; on each side the circle, at the bottom of the *Piston*, are two angular pieces for *Piston* to slide between, for the purpose of keeping *Piston* and *Plattin* steady.

The *Links* are made of wrought iron, as given in the engraving: the working parts, which are the half circles, are composed of hardened steel: the upper ones work on the *Main Bolt*, which goes through the *Piston*, upper end of *Links*, and *Slot-hole* in the *Head*; and the lower ones act on the *Lugs* on each side of the *Fulcrum*, when the latter is brought perpendicular by the force applied; it also brings the *Links* in the same position: by which means the half circle of *Fulcrum* is brought in powerful contact with the *Trunion*, and thus the power is simply obtained.

The *Fulcrum*, or *Mouth Piece*, is solid iron, as here shown; the half circle at the top works against the *Trunion*, under the middle of the press head; in the centre of *Fulcrum*, are two projecting *Lugs*: that is, one on each side, which are strengthened by a shank; these *Lugs* are for the lower part of the *Links* to work upon when the impression is given; in the circle at the bottom is a mortise to receive the eye-end of the swivel to which the *Coupling Rod* is attached, and through which it is fastened by a pin.



The *Brass Links*, one end of each is fastened to the upper end of the *Piston*, and the other ends are attached to the base of the *Brass Cap*, in which is a *Slot-hole*, similar to the one in the *Head*, through which a bolt passes, that takes the top of the *Brass Links* and the *Spring Bolt*, by which the whole works are drawn up, or counterpoised, from the force of the *Spiral Spring* in the *Brass Cap*, which is regulated by means of a nut on the top of the *Spring Bolt*, which presses against the *Spiral Spring*: thus the *Platlin* and *Bar* are returned.

The *Coupling Bar* is an iron rod, with an eye at one end, which fits into the middle of the *Shoulder Piece*, and is there pinned; the other end meets the piece attached to the *Fulcrum*, and forms a swivel, as here represented.

The *Platlin*, *Table*, *Tympans*, &c. are similar to those of the *Columbian*: consequently they need no further description of them here.

The *Cheek*, or *Guide Pieces* are made in the form here represented, and are screwed on the projections from the pillars, and press against the *Piston*.

The *Shoulder Piece*, or *Socket for the Bar*, is of cast iron: in the circle at the end is a hole by which it is attached to the *Staple*; the centre is cast hollow, so as to receive the end of the *Coupling Bar*, which passes to a right angle with the perpendicular of the *Links*, from which originates this simple but immense power, where it is fastened by a steel pin: the other end being connected by a double joint to the part of the *Rod* attached to the *Fulcrum*.

The *Screw* here given is in the form of the one by which the power is regulated: it passes through an iron bar which is screwed to the two projections on the near side of the *Staple*.

These *Inking Frames* are made in the form here represented; the whole is composed of iron, with the *Cylinder* turned off to the greatest exactness, underneath which is a steel edge that scrapes the ink off the *Cylinder* to the exact quantity required; this is regulated by means of *Levers* that pass under the *Table*, on which is hung two weights, to be removed according to the quantity of ink required for the work: one end of these levers are to press against the *Ductor*, or *Regulator*. The *Ductor* and *Cylinder* are fitted together so close, that it will hold water; consequently there is not the least possibility of the ink escaping more than is wanted for the purpose required; the *Cylinder* has an ornamental iron cover, which is always kept on except when a fresh supply of ink is required: by which means all dirt and dust is kept both from the ink and *Cylinder*, the latter is moved by a small handle at one end: the *Table* is turned off in a lathe perfectly true, the same as in the presses.

We have been as explicit as possible in the descriptions of the foregoing presses, which have passed under our review; we have fulfilled this arduous task to the utmost of our humble ability, and should they meet the approbation of our brethren we shall consider our labour not ill bestowed; we have endeavoured, throughout the work, to do ample justice to every subject under consideration, and we flatter ourselves that what we have advanced will be received in candour as our firm conviction: we freely acknowledge that we have heard of a variety of other presses, but not having seen them ourselves, we must decline giving a notice of them here, not wishing to risk our professional reputation on any verbal or other statements, even from whatever quarter they may be handed to us; for, had we given a notice and description of every one which we have heard of, laborious indeed would have been the task, as well as an unnecessary occupation of a number of our pages, which could not possibly be spared: in truth, we really consider that few, if any of them, are justly entitled (from merit) to rank with those which we have considered fully deserving of a place in the present work.

CHAP. XVI.

THE BUSINESS OF A WAREHOUSEMAN.

The warehouse business of a printer is a highly important part of his concern; the bad management of which not only injures his own credit, but also materially affects the interest of his employers; it is therefore indispensably necessary to appoint such a man for the management of it, who has been regularly brought up to the business, and on whom the utmost reliance may be placed for honesty, sobriety, and integrity.

Some printers, with a view to save a few shillings per week, take into their service lads or men perfectly unacquainted with the business of the warehouse, who, through ignorance and carelessness, fall into many serious mistakes: such as mixing paper of the same size, belonging to different persons, and thereby destroying the uniformity of the work; giving or setting out the paper incorrectly, which must afterwards be made good by reprinting those sheets which are found to be deficient; or if the deficiency is not very great, the sheet wanting is left out of a book here and there, and in this imperfect state the work is delivered to the bookseller, who, perhaps, if a large number has been printed, will be several years before he discovers the loss, and then cannot, after so long a time, with any degree of propriety, demand his books to be made perfect. Many other circumstances might be stated to shew the impropriety and disadvantage of employing persons in the warehouse not acquainted with its business; we must however observe, that the master or overseer should frequently look to the concerns of the warehouse, that the people employed there may get forward the different works with neatness and accuracy.

Having made these observations on the impolicy of employing persons in the warehouse unacquainted with its business, we shall now proceed to lay down its different stages, and begin by supposing the warehouse to be quite clear, business coming in, and the warehouseman just entering upon his office. He should first be provided with a book which is termed "*The Warehouse-book*," agreeable to the annexed plan, about the size of a foolscap quarto. When the porter or carman brings paper from the stationer or bookseller, the warehouseman should demand the bill of delivery, order the paper to be brought in, and see if it is right according to the bill, before he discharges him; and if right, dismiss him, and enter it immediately into the *Warehouse-book*, as follows:

Typographia....559

The Warehouse Book:

Jackson's Shakspeare's Genius Justified. No. (printed) 1000.

Date.	Receipt of Paper, and of whom.	No. of books delivered.	To whom delivered---with his signature.	For whom.
1818.				
Nov. 3.	20 Rms. of Messrs.			
Dec.	Bowles & Gardiner			
	10 Ditto.			
24		100	John Jones.	Mr. J. Major.
30		300	Richard Williams, Bookbinder.	Ditto.
1819.				
Jan. 7		400	Edward Hughes.	Ditto.
9	with waste	230	John Warwick.	Ditto.
		1030		

The above plan will prevent disputes with the bookseller or author, relative to the receipt of paper, or delivery of books, as the signature of the person to whom the books were delivered can be immediately produced. It also enables the warehouseman to distinguish, with more ease, the different articles he might have occasion to refer to.

Having entered the receipt of the paper, he should then write on each bundle, with red chalk, the title of the book it is intended for, and remove it into a part of the warehouse, or store-room kept for that purpose, observing to place it so as to take up as little room as possible.

Of giving or Selling out Paper for the Press.

A bundle of paper contains two reams, or forty-three quires, and twenty-four sheets to each quire, if *perfect*; if not, twenty quires to the ream, of which the two outside quires are called *corded* or *cassie*, as they only serve for cases to the ream. These outside quires are by the paper-maker made up of torn, wrinkled, stained, and other damaged sheets, yet the whole quire very rarely consists of such sheets; but frequently some good sheets may be found in looking them over. But the general custom now is, for booksellers and authors to send in their paper perfect. When, however, it is sent in imperfect, it is the warehouseman's business to lay by the two outside quires, and cull them when most convenient; likewise to dispose of them so, that they may neither be at the beginning nor end, but about the middle of the volume; or use them for jobs or proof paper; for they are seldom so perfect as the inside quires.

It is the general custom to print of every work what is termed an *even* number, either 250, 500, 750, 1000, &c. These quantities are set out for the welter in *tokens*; viz. for 250 (sheets) one token, containing 10 quires 18 sheets; for 500, two tokens—one 11 quires, and the other 10 quires and a half; for 750, three tokens, two of them 11 quires each, and the other 10 quires 6 sheets; and for 1000, four tokens, three of them 11 quires each, and the other 10 quires. If a work is printed in half sheets, it of course requires only half the above quantities.

As it will sometimes happen that other numbers different from the above are printed, we have, therefore, given the following table, which shews the quantity of paper necessary for that purpose: also another table, shewing the quantity of paper to be given out for jobs of different sizes. This table, we conceive, will be found highly useful in the warehouse, and should be stuck up in a conspicuous place, or stitched into the *Warehouse-book*. The calculations have been made with much care, and will, we trust, be found accurate.

No.	Qs.	Shts.	No.	Qs.	Shts.
100	4	10	600	25	20
150	6	12	650	28	6
200	8	16	700	30	4
300	12	20	800	34	8
350	14	22	850	36	12
400	17	0	900	38	16
450	19	2	950	40	20
550	23	16			

A TABLE

Shewing the Quantity of Paper to be given out for any Job, from 25 to 5000; and from 2 on a Sheet, to 128.

No.	2		4		6		8		9		12		15	
	q.	s.	q.	s.	q	s.	q.	s.	q.	s.	q.	s.	q.	s.
25		15		8		5		4		3		2½		2
50	1	4		14		9		7		6		5		4
75	1	16		20		14		10		9		7		5½
100	2	4	1	2		18		13		12		9		7
150	3	4	1	14	1	1		19		18		13		11
200	4	4	2	2	1	10	1	1	1	0		18		14
250	5	4	2	14	1	18	1	7	1	5		22		18
300	6	4	3	2	2	2	1	14	1	10	1	1		21
350	7	4	3	14	2	11	1	20	1	15	1	5	1	0
400	8	4	4	2	2	19	2	1	1	21	1	9	1	8
450	9	4	4	15	3	2	2	7	2	1	1	13	1	6
500	10	5	5	3	3	11	2	14	2	7	1	18	1	9
550	11	5	5	15	3	19	2	20	2	13	1	22	1	13
600	12	5	6	3	4	2	3	2	2	18	2	1	1	16
650	13	5	6	15	4	11	3	8	2	24	2	5	1	19
700	14	5	7	3	4	19	3	14	3	4	2	10	1	23
750	15	5	7	15	5	2	3	20	3	10	2	14	2	1
800	16	5	8	3	5	11	4	2	3	16	2	18	2	4
850	17	5	8	15	5	19	4	8	3	21	2	22	2	8
900	18	5	9	3	6	2	4	14	4	1	3	1	2	11
950	19	5	9	15	6	11	4	20	4	7	3	6	2	14
1000	20	0	10	4	6	19	5	2	4	13	3	10	2	18
1050	21	0	10	10	7	2	5	8	4	18	3	14	2	21
1100	22	0	11	4	7	11	5	14	4	24	3	17	3	0
1200	24	0	12	4	8	2	6	2	5	10	4	1	3	6
1300	26	0	13	4	8	19	6	14	5	21	4	10	3	12
1400	28	0	14	4	9	11	7	2	6	7	4	18	3	19
1500	30	0	15	4	10	3	7	14	6	18	5	1	4	1
1600	32	0	16	4	10	19	8	2	7	5	5	10	4	7
1700	34	0	17	4	11	11	8	14	7	16	5	18	4	14
1800	36	0	18	4	12	3	9	2	8	2	6	1	4	21
1900	38	0	19	4	12	19	9	14	8	13	6	10	5	3
2000	40	0	20	4	13	11	10	2	9	0	6	18	5	9
2500	50	0	25	4	16	19	12	15	11	5	8	10	6	18
3000	60	0	30	5	20	3	15	2	13	10	10	1	8	1
3500	70	0	35	5	23	11	17	15	15	16	11	19	9	9½
4000	80	1	40	5	26	19	20	2	17	22	13	11	10	18
4500	90	1	45	5	30	3	22	15	20	3	15	2	12	1
5000	100	1	50	5	33	12	25	3	22	8	16	20	13	10

A TABLE

Shewing the Quantity of Paper to be given out for any Job, from 25 to 5000; and from 2 on a Sheet, to 128.

No.	16	18	20	21	24	30	32
	q. s.	q. s.	q. s.	q. s.	q. s.	q. s.	q. s.
25	2	2	1½	1½	1½	1	1
50	3½	3	3	3	2½	2	2
75	5	4½	4	4	3½	3	2½
100	7	6	5½	5	4½	3½	3½
150	10	9	8	8	7	5½	5
200	13	12	10½	10	9	7	6½
250	17	15	13	13	11	9	8
300	20	17	15½	15	13	10½	9½
350	23	20	18	17	15	12	11
400	1 1	23	20½	20	17	14	13
450	1 4	1 1	23	22	19	15½	14½
500	1 7	1 4	1 1	1 0	21½	17	15
550	1 10	1 6	1 3	1 2	24	19	17½
600	1 13	1 9	1 5½	1 4	1 1	20½	19
650	1 16	1 12	1 8	1 6½	1 3	22	20½
700	1 20	1 14½	1 10½	1 9	1 4½	24	22½
750	1 23	1 17½	1 13	1 11½	1 7	1 0½	24
800	2 1	1 20	1 15½	1 14	1 9	1 2	1 0½
850	2 4	1 23	1 18	1 16	1 11	1 4	1 2
900	2 7	2 1	1 20½	1 18½	1 13	1 5½	1 3½
950	2 10	2 3½	1 23	1 21	1 15	1 7	1 5
1000	2 14	2 6½	2 1	1 23	1 17½	1 8½	1 7
1050	2 17	2 9	2 3	2 0½	1 19½	1 10½	1 8½
1100	2 19	2 12	2 5½	2 3	1 21½	1 12	1 9½
1200	3 1	2 18	2 10½	2 8	2 0½	1 15½	1 13
1300	3 7	2 23	2 15½	2 12½	2 4½	1 19	1 16
1400	3 13	3 3½	2 20½	2 17½	2 9	1 22	1 19
1500	3 19½	3 9	3 0½	2 22	2 13	2 0½	1 22
1600	4 1	3 15	3 5½	3 2	2 17	2 3½	2 0½
1700	4 7	3 20	3 10½	3 7	2 21½	2 7	2 3½
1800	4 13	4 1	3 15½	3 11	3 1	2 10½	2 7
1900	4 19½	4 6½	3 20½	3 16	3 5	2 14	2 10
2000	5 1	4 12	4 0½	3 21	3 9	2 17	2 13
2500	6 7	5 15	5 0½	4 20	4 5	3 9	3 4
3000	7 13	6 17½	6 0½	5 18½	5 1	4 0½	3 19½
3500	8 20	7 21	7 1	6 17½	5 21½	4 17½	4 10
4000	10 1	8 28	8 1	7 16½	6 17½	5 9	5 0½
4500	11 8	10 1	9 1	8 15½	7 13½	6 0½	5 16
5000	12 14	11 4	10 1	9 15	8 9	6 17½	6 7

N. B. The first column states the number to be given out; the other columns, the exact quantity of paper necessary (allowing for waste) for each respective number.

No.	36		40		48		56		60		64		72	
	q.	s.	q.	s.	q.	s.	q.	s.	q.	s.	q.	s.	q.	s.
25	1		1		1		1		1		1		1	
50	1	1	1	1	1	1	1		1		1		1	
75	2	1	2		1	1	1	1	1	1	1	1	1	1
100	3		2	1	2	1	2		1	1	1	1	1	1
150	4	1	4		3	1	3		2	1	2	1	2	1
200	6		5	1	4	1	3	1	3	1	3	1	3	
250	7	1	6	1	5	1	4	1	4	1	4		3	1
300	8	1	7	1	6	1	5	1	5	1	4	1	4	1
350	10		9		7	1	6	1	6		5	1	5	
400	11	1	10	1	8	1	7	1	6	1	6	1	5	1
450	13		11	1	9	1	8	1	7	1	7	1	6	1
500	14	1	13		10	1	9	1	8	1	8		7	1
550	16		14		11	1	10		9	1	8	1	7	1
600	17		15	1	12	1	11		10	1	9	1	8	1
650	18	1	16	1	13	1	11	1	11		10	1	9	1
700	20		18		14	1	12	1	12		11	1	10	
750	21		19		15	1	13	1	12	1	12		10	1
800	22	1	20	1	17		14	1	13	1	12	1	11	1
850	24		21	1	18		15	1	14	1	13	1	12	
900	1	0	22	1	19		16	1	15	1	14	1	12	1
950	1	2	1	0	20		17	1	16		15		13	1
1000	1	3	1	0	21		18		17		16		14	
1050	1	4	1	1	22	1	19		17	1	16	1	14	1
1100	1	6	1	2	23	1	20		18	1	17	1	15	1
1200	1	8	1	5	1	0	21	1	20	1	19		16	1
1300	1	11	1	7	1	2	23	1	22		20	1	18	1
1400	1	14	1	10	1	4	1	0	23	1	22		19	1
1500	1	17	1	12	1	6	1	2	1	0	23	1	21	
1600	1	20	1	15	1	8	1	3	1	2	1	0	22	
1700	1	22	1	17	1	10	1	5	1	3	1	1	23	1
1800	2	0	1	20	1	12	1	7	1	5	1	2	1	0
1900	2	3	1	22	1	14	1	9	1	7	1	5	1	1
2000	2	6	2	0	1	17	1	11	1	8	1	6	1	3
2500	2	20	2	12	2	2	1	20	1	17	1	14	1	10
3000	3	9	3	0	2	13	2	3	2	0	1	22	1	17
3500	3	24	3	13	2	23	2	12	2	8	2	5	1	23
4000	4	11	4	0	3	8	2	21	2	17	2	12	2	5
4500	5	0	4	13	3	19	3	5	3	0	2	20	2	12
5000	5	14	5	0	4	4	3	14	3	8	3	0	2	19

The large figures at the top specify the number on a sheet. q & s stand for quires and sheets. The above calculations are made from the perfect quire, viz. 25 sheets.

No.	80		90		96		100		110		120		123	
	q.	s.	q.	s.	q.	s.	q.	s.	q.	s.	q.	s.	q.	s.
25		½		½		½		½		½		½		½
50		½		½		½		½		½		½		½
75	1		1		1		1		1		1		1	
100	1	½	1	½	1	½	1	½	1		1		1	
150	2		1	½	1	½	1	½	1	½	1	½	1	½
200	2	½	2	½	2	½	2	½	2		1	½	1	½
250	3	½	3		2	½	2	½	2	½	2	½	2	
300	4		3	½	3	½	3	½	2	½	2	½	2	½
350	4	½	4		3	½	3	½	3	½	3		2	½
400	5	½	4	½	4	½	4	½	3	½	3	½	3	½
450	5	½	5	½	4	½	4	½	4	½	4		3	½
500	6	½	5	½	5	½	5	½	4	½	4	½	4	
550	7		6	½	5	½	5	½	5	½	4	½	4	½
600	7	½	6	½	6	½	6	½	5	½	5	½	4	½
650	8	½	7	½	7		6	½	6		5	½	5	½
700	9		8		7	½	7	½	6	½	6		5	½
750	9	½	8	½	8		7	½	7		6	½	6	
800	10	½	9		8	½	8	½	7	½	6	½	6	½
850	10	½	9	½	9		8	½	8		7	½	6	½
900	11	½	10	½	9	½	9	½	8	½	7	½	7	
950	12		10	½	10		9	½	8	½	8		7	½
1000	12	½	11	½	10	½	10	½	9	½	8	½	8	
1050	13	½	11	½	11		10	½	9	½	9		8	½
1100	14		12	½	11	½	11	½	10	½	9	½	8	½
1200	15	½	13	½	12	½	12	½	11		10	½	9	½
1300	16	½	14	½	13	½	13	½	12		11		10	½
1400	17	½	15	½	14	½	14	½	13		12		11	
1500	19		16	½	15	½	15	½	13	½	12	½	12	
1600	20	½	18		16	½	16	½	14	½	13	½	12	½
1700	21	½	19		18		17	½	15	½	14	½	13	½
1800	22	½	20	½	19		18	½	16	½	15	½	14	½
1900	24		21	½	20		19	½	17	½	16		15	
2000	1	0	22	½	21		20	½	18	½	16	½	15	½
2500	1	6	1	8	1	1	1	0	23		21		19	½
3000	1	12	1	8	1	6	1	5	1	2	1	0	23	½
3500	1	19	1	14	1	11	1	10	1	7	1	4	1	2
4000	2	0	1	19	1	16	1	15	1	11	1	8	1	6
4500	2	6	2	0	1	22	1	20	1	16	1	12	1	10
5000	2	12	2	5	2	2	2	0	1	20	1	16	1	14

The overplus sheets are allowed for tympan-sheets, register sheets, and other incidents; such as bad sheets, faults committed in beating, pulling, bad register, &c. for all or any of these incidents, the pressman doubles the sheet in the middle, and lays it across the heap as waste; or in case that sheet should run short, the gatherer may chuse out the best of them to make good the deficiency. In setting out the paper, the warehouseman lays each token with the folded side, or back part, one way, and the other token with the folded, or back side, the other way, that the wetter may distinguish the different tokens; when this is done, he writes a label, and puts it into the bundle, with the following inscription on it:— *Typographia, Feb.* 13, 1824—or whatever may be the title of the book, that the pressman, when he takes up the heap, may not take the wrong one by mistake; and by writing this label, and the day of the month, he can at all times ascertain how long the paper has been wet, and thereby know the state it is in.

Of hanging up Paper to dry.

When the paper is worked off, the warehouseman takes the heap and carries it to a place where poles are fixed longitudinally, for the purpose of hanging them upon to dry, and lays it down on a stool, or table, of a convenient height, with one end of the heap from him; he then takes the handle of the peel in one hand, and lays the top part down upon the heap, so that the upper edge may reach near the middle of the sheet; after which, with the other hand, he doubles over so much of the printed paper as he thinks sufficient to hang up at one lift, which should be about seventeen sheets, as near as he can guess, or twelve; &c. as he can allow time to dry, or have pole-room to hang them on. Nevertheless, there are some warehousemen who, to get rid of their work, will hang up a quire or more at a lift, which, through its thickness, keeps wet a *long* while, where it bears heavy on the pole; besides it often draws out turpentine from the wood, which leaves a yellow stain upon the paper. But supposing the poles well seasoned, and not likely to stain, still it is hazardous, and ought on no account to be allowed. Some paper is much more liable to mildew than others, and particularly that part which rests on the pole, as it retains the water longer than the sides, which having the advantage of the air circulating between, get dry first.

Having thus doubled the first lift on the peel, he raises it, holding it aslant, that the shorter fold of the sheets may open from the peel, in order to convey it over the pole; and then drawing the peel from under, leaves the sheets remaining on the pole, beginning at one end of the first pole, and so continuing, lift after lift, till he has completed the whole, observing that he lodges each lift about an inch one over the other, to prevent the air from blowing them down.

Of taking down the Sheets when dry.

When the sheets are sufficiently dry, the warehouseman takes his peel and brush, and with the peel begins with the last lift hung up, on account of the wrapper being with that lift, and continues to proceed to the other, successively taking them down and brushing them, till he has finished the whole: taking

care that he lays the single signature of each lift one over the other; if this is not done, it will occasion considerable trouble to turn them when they are to be collated.

There is also another way of taking the sheets down from the poles, which is, by laying the flat side of the peel against the edge of that lift which hangs over the other books, and pushing the peel forward, he forces them to slide, one doubling over the other, and so finishes his business with more expedition. But this method cannot be recommended, because the dust, which naturally flies about, while the sheets are hanging, must lodge on them, and by pushing them forward, is rubbed in, instead of being brushed off.

Of putting by the Sheets, or Signatures, when taken down.

When the whole of the impression of the signature is taken down, he then removes them to the warehouse, and there knocks them up, and puts them by in that part of the room where they will be most out of his way, or in one of the stalls; till he has a sufficient number of signatures to form a gathering; but two or three sheets of each signature should be put by, in case the author, bookseller, or master, should want a copy of the work, or a specimen of as many sheets as are finished, before they are gathered; if he has not done this, and clean sheets should be wanted, he will then be obliged to lift every signature to get a sheet out of each; this will occasion a great loss of time, which may be easily prevented by reserving a few sheets as they are worked off. When he lays down the gathering, if they have not been wanted, it is easy to return them to their respective signatures.

Of laying down a Gathering.

To lay down a gathering, is to place the several heaps, with their signatures following each other, upon benches or forms of a proper height, beginning with the first signature of the body of the work, and laying it upwards, which is sometimes marked A, but in general B, placing it on the left end of the gathering-board with the length of the sheet before him, and the single signature (A or B) next him; he then follows with C, D, &c. laying them close to each other in the same position as the first, till he has laid down a sufficient number of sheets, which is commonly from B to M, unless the volume consists only of fourteen or fifteen sheets, in that case he may as well lay down the whole at once, rather than make two gatherings of them, he will then save himself the trouble of hooking them; but where a volume runs through the alphabet two or three times, several gatherings must be made. In such cases, eleven or twelve sheets in a gathering is enough. The title, *little a, b, c, cancels*, &c. if any, should be left till the last, and placed at the end of the gathering, so that, when folded, they may be found withinside the gathering.

Should the impression of each signature be so large as to cause the heaps, when laid down, to be too high for the gatherer, he may, if there is room enough on the boards, by dividing each heap, lay a double gathering, which is done in the following manner; taking one half from the first heap, and laying them, with a wrapper underneath, at the end of the last

heap of the gathering, and so continuing to divide each heap successively, and laying them at the end of each other, till he has divided the whole; and as he lowers them, may, if he thinks proper, draw them up again as he finds most convenient; but where plays and children's books are done, containing three or four sheets, they should be laid down three or four times, to the full length of the gathering-board.

Of Gathering.

The art of gathering chiefly consists in not taking up more than one sheet at a time, and to gather those sheets with swiftness. He begins at the left hand of the row; laying his left arm across the first heap, he takes a sharp pointed bodkin or needle in his right hand, and with the sharp end of it, just touches the right hand corner of the sheet, and raising his hand, lifts up that corner, which he immediately receives in his left, and conveys it to the next heap, and is particularly careful to place it even over the other, that he may not have much trouble in knocking them up; taking the second in the like manner as the first, he goes to a third, fourth, &c. to the end, and then proceeds to knock the gathering up; viz. to make the sheets lie exactly even over each other, which is done in the following manner; a table being provided for this purpose, or one end of the gathering-board clear, on which he has placed a wrapper, he takes the ends of the sheets between his thumb and fingers of each hand, and grasping them loosely, holding them upright, with the long side or edge on the surface of the table, lifts them up about four inches high, then lets them drop quickly through his hands, and catches them up again several times until they are quite even; for by these repeated jerks, those sheets which were above the rest are driven downwards, and those that were lower, upwards, and by forcing his hands forward at the time of their falling causes them to be even at the sides; when he finds them exactly even, he lays them on a wrapper, and proceeds gathering on as before, knocking them up, and placing them on the one he has just gathered, with the single signature of each gathering; lying successively one upon the other, still going on in the same manner, till he has piled them to a convenient height; he then covers the pile with a wrapper, to keep the dust from soiling the top sheet, and proceeds working up, pile after pile, till the whole is finished; but, while he gathers, keeps his eye on the sheets, lest any should be torn, dirty, &c. and if he finds any of that description, he doubles them up, and puts them at the bottom of the heap they belong to.

The most general, and perhaps the most expeditious mode, is to use neither bodkin nor needle, but damp the end of the thumb with the tip of the tongue, and by this means lift up the sheets; but great care must be taken that the fingers are perfectly clean, or a great number of sheets will be spoiled.

When the gatherer has worked till one of the sheets is deficient, (for it would be an extraordinary circumstance for them to be just equal), he doubles up the odd sheets upon one another, covers them up with wrappers, and then puts them by till he collates.

Of collating Books.

The *warehouseman* takes some of the books which have been gathered, and puts them on a table, or gathering-board, with the single signature before him, at his right-hand, and his left arm across the heap; he then, with a sharp-pointed bodkin or needle, lightly pricks up the corner of the first sheets of the single signature, viz. A or B, and with the thumb of his left hand catches it up, and nimbly shifts it between the two fore fingers of the same hand, that he may be ready with his thumb to do the same to a second, &c. for if he does not thus secure the sheets between his fingers, on receiving the next, the latter sheet would immediately fall back, and obstruct his view of the following signature; for the collater cannot be too attentive in observing whether the gathering be true, that is, free from having two sheets of one signature, sheets turned the wrong way, or left out in the gathering, &c. and if he finds a sheet *wanting* or damaged, he may supply the defect from the heaps on the gathering-board, as it is the best and the most expeditious mode for the warehouseman to go on with the collating at the same time the errand boy, or some other person, is proceeding with the gathering. If duplicates have been gathered, he draws the overplus sheets from the rest, and lays them aside till he has collated the pile, after which he distributes them to their respective signatures.

Having collated a gathering, he lays it on his left, with a wrapper underneath, to keep the board from soiling the *sheet*; then collates another, and puts that on the one he has just laid down, not even, but rather across it, that when he begins to fold, he may with ease distinguish each gathering, and continues in the same manner till he has thoroughly examined the pile. Others again do not lay the gatherings down separately; but, when one is done, put the collated corner from them, and draw the next near them, and so proceed, moving each gathering backwards and forwards as they collate them; and when they have got a sufficient handful, turn them over, and keep going on as before, till the pile is finished. This way, if properly attended to, is the best, as it expedites the work, and answers the same end.

Of Folding.

Having collated the heap or pile of gathered books, he proceeds to folding, which is performed in the following manner: the gatherings being on one side of him, he takes down one of the books from the rest, knocks it up on the board or table, and then keeps the single signature of the first sheet with its face downwards to the table, so that when he doubles it up, he folds the last sheet inwards, and the first outwards. The manner of knocking the book up having been already described, a repetition of it here is needless; so, supposing the sheets exactly even one over the other, he lays the gathering flat on the table, and having hold of the ends, or sides, in his hands, doubles the *right hand hold* over to the left; but before he receives the end of the book from his right hand, he nimbly shifts it to *his left*, between the two fore-fingers of the same hand, and then releases the other end from the right; for, by having it

in that position, that is, with his fore-finger between the two folds, he can, (though not doubled quite even) shift it which way he thinks proper, without discommoding any of the sheets.

It being now doubled up, and the edges placed exactly even over each other, he rubs the palm of his right hand hard on the fold or back part of the book, that it may remain close together. When this is done, he lays it on the wrapper near him, and works on as before, observing to fold them as the work requires: viz. if twelves, in the long cross: and if folio, quarto, octavo, sixteens, eighteens, or twenty-fours, in the short cross.

Folding books is an important concern, and ought to be particularly attended to by the printer, because, if they are unevenly folded, the dust, by long standing, will work in, and soil those sheets that come out further than the rest, so that, when bound, they will have on the margin a border of dust, unless the binder cuts very deep, which must be allowed to deface the beauty of a volume. On the other hand, if the binder is nice in his work, and will not suffer a bad sheet to appear in it, he sends word that it is wanting, and it is very rarely that he sends back the damaged sheet, which impoverishes the waste, and likewise is an additional disgrace to the warehouseman for his negligence in not properly collating the books; and should it happen to be the sheet which is short in the gathering, a book must thereby be rendered imperfect, none of that signature being left to make good the deficiency. It is necessary here to observe, that though books seem apparently uneven, it is not always owing to the folder's negligence; therefore, before blame can properly be attached to him, the books should be first examined: because, though the quality of the paper has been attended to by the purchaser, yet perhaps that nicety respecting the size may not have been so much regarded by him, so that some of the sheets in a volume, or gathering, are frequently found to differ half an inch in size.

In some paper the sheets run equal enough as to size, but are not square; and if folios, quartos, octavos, or sixteens, were to be folded with the two bottom corners even together, they would be extremely uneven; therefore the best that can be done, when it so happens that the sheets run in this unsquare manner, is to knock them up well, and fold them so that they may at least be brought even at the middle of their outer margins: then the outer margin of each will share the defect alike. When sheets are flimsy, which is sometimes the case, the more the folder knocks them up the worse they are, for the knocking them up only batters their edges, instead of bringing them even; therefore, before they are folded, the uneven sheets must be pulled even, and then gently knocked up.

Of counting out and pressing of Books.

Having folded a parcel, or the whole of the gathered books, the warehouseman proceeds to count them out into proper quantities, according to the thickness of the gathering: if very thick, only five; if thin, ten, fifteen, twenty, or twenty-five, nay, sometimes fifty, according to their thickness, and observes to keep the same number in the count of each different gathering throughout the work. He then lays them flat on the table,

and gives them a blow or two with the palm of his hand on the folded or back side to make them lie close; after which he gently knocks them up even, and puts them into the standing press, if empty; if not, in a convenient place, on a wrapper, or waste sheet, till the press is empty, with the folded or back side of the first parcel one way, and the second quantity of books with the folded side or back the other way, and continues in the same manner, putting them on one after the other, till the press will permit no more in height; then he proceeds to pile up, range by range, till full, observing that each range contains an equal quantity of books, and stand in a right parallel, that when they are screwed down they may all receive an equal pressure; the reason why he is particular in reversing the edges of each count is, that if he did not, it would be impossible to pile them up straight with their backs to lie all one way; for, in printing, if the matter does not run close and even alike, but, on the contrary, some pages are loose and open, and others close, the open pages, receiving a deeper impression than the close, make that part of the sheet swell, while the remaining ones lie closer: therefore, were a number of books to be piled (before pressed) with their backs one way, they would be raised up at one end, and consequently would soon slide down; which inconvenience is remedied by reversing them; for, turning the thick end on the thin, they are brought to lie level; besides, their number then can readily be told. The press being now full, the warehouseman takes the wooden pin belonging to it, and screws it down as low as he can, after which he takes a strong iron bar, that measures about five or six feet in length, and with it works the spindle of the press round with all his force as tight as he possibly can, and lets the books remain in it about twenty-four hours before he takes them out; the time being expired, he takes them out of the press, and puts them in one of the stalls, but covers them neat and close with a wrapper under and over, so that the dust may not easily penetrate; then writes a label and puts in the pile, expressing on it the title of the book, and how many the parcel contains; but should the impression be more than the press will admit of at once, he fills it up again in the like form as the first, and so continues till the whole is completed.

If the impression is not very large, and will make only a few bundles, or that he expects to have a long time under his charge, he ties them up into bundles, laying a wrapper under and over each, and writes the title and the number of books in the bundle on the upper wrapper, then puts them aside in the store room, or some convenient part of the warehouse, that he may have free access to deliver them out according to order. As soon as the books are finished, he acquaints the author or bookseller that the whole of the impression is ready for delivery.

Of making up the Waste.

After the books have been collated and folded, and the duplicate sheets that were drawn out distributed, he takes the last signature first, and shakes the spoiled or doubled up sheets out, if any, from between the others, then lays the overplus clean sheets flat on the table, with the single signature up-

wards towards him, and opens the doubled or spoiled sheets, and places them on the former with the signature the same way. This done, he turns them over, knocks them even, folds them, and puts them near him, with the single signature upwards; he then takes the sheets that lie next to the signature he has just folded, and does the same to that, placing it on the other, and continues till he has finished the whole; after which, he presses and ties them up together, and writes on the bundle which sheet is deficient, and the title of the book, then puts them in a proper place, where they will be ready to come at, whenever he may have occasion; but it must be observed, if there should be amongst the sheets distributed, any of the signature that was wanting, he gathers again, till that, or some other sheet, is deficient, collating and folding them, and putting them with the other books.

Of Booking the different Gatherings.

When a volume runs through several alphabets, it must consequently make more than one gathering; therefore to put the different gatherings together in regular succession to make a complete volume, the warehouseman takes as many counts of the first gathering as he can conveniently carry, and lays them on the place where they are intended to be booked. He then lays a wrapper on the gathering-board, and takes the first count or reversed parcel, and places it on it, with the single signature upwards; a second quantity is then laid down in the same way, with their backs one on the other, and placed so that the end of one of the parcels may project outwards, while the end of the other is turned inwards, and continues piling them in this distinct manner, till he has got them sufficiently high; after this is done, the second gathering is placed by the side of the first, with their outer margin against the backs of that gathering, and piled up in the same manner, till it contains the same number of gatherings as the first parcel.

If a book makes more than two gatherings, they are laid down one after the other, as before observed. The utility of laying down each count, so that they may project a little over each other, will be readily perceived; for should he take two gatherings of one sort, or lot one slip from his fingers unperceived, (which is not improbable where there is a number of gatherings in a volume,) on their being placed in this manner, he quickly discovers his error by their not running equal at the end of every count. If he does not lay them in this manner, a mistake of this sort will not be detected till he comes to the bottom of each gathering; and then to rectify the error will be attended with much trouble. When he has laid down some of each gathering, he proceeds to book them, which is done by taking one from each parcel, beginning with the first; he then knocks them even, and places them on a wrapper, reversing each book. They are afterwards tied up in bundles, or piled away in a convenient part of the warehouse, with a wrapper under and over, and a label in each pile. If some odd gatherings are left, (which is highly probable), they are then added to the bundle of waste, and a memorandum made of it on the upper wrapper.

CHAP. XVII.

ABSTRACTS OF THE ACTS RELATIVE TO PRINTERS.

We shall now present our readers with *brief notices of* the different Acts of Parliament which have been passed respecting printers, in order that the profession may know how far the several clauses affect them, with respect to whatever they may hereafter print.

By the Act 13 Geo. II. c. 19, *(to restrain* and prevent the excessive increase of horse races, &c.) it is enacted, "That every person or persons who shall make, print, *publish*, advertise, or proclaim any advertisement or notice of any plate, prize sum of money, or other thing, of less value than *fifty pounds, to be run for* by any horse, mare, or gelding, shall forfeit and lose the sum of one hundred pounds."

By the Act 25 Geo. II. cap. 36, (for the better preventing thefts and robberies,) *it is* enacted, "That any person publicly advertising a reward with 'No questions asked,' for the return of things which have been stolen or lost, or making use of any such words in such public advertisement, &c. shall for every such offence forfeit fifty pounds."

The Act 39 Geo. III. cap. 79, (for the more effectual suppression of societies established for seditious and treasonable purposes,) contains several provisions and penalties respecting printers, letter founders, and printing press makers.

Sect. 23 enacts, "That, from and after the expiration of forty days from the day of passing this Act, every person having any printing press, or types for printing, shall cause a notice thereof, signed in the presence of and attested by one witness, to be delivered to the Clerk of the Peace acting for the county, stewartry, riding, division, city, borough, town, or place, where the same shall be intended to be used, or his deputy, according to the form prescribed in the schedule hereunto annexed: and such Clerk of the Peace, or deputy respectively, shall, and he is hereby authorized and required to grant a certificate in the form prescribed in the schedule hereunto annexed, for which such Clerk of the Peace, or deputy, shall receive the fee of one shilling, and no more: and such Clerk of the Peace, or his deputy, shall file such notice, and transmit an attested copy thereof to one of his Majesty's principal Secretaries of State; and every person who, not having delivered such notice, and obtained such certificate as aforesaid, shall, from and after the expiration of forty days next after the passing of this Act, keep or use any printing press or types for printing, or having delivered such notice and obtained such certificate as aforesaid, shall use any printing press or types for printing in any other place than the place expressed in such notice, shall forfeit and lose the sum of twenty pounds."

Sect. 24 exempts his Majesty's printers, and the public presses belonging to the two Universities.

Sect. 25 and 26 relates to type founders and press makers.

Sect. 27 enacts, "That from and after the expiration of forty days after the passing of this Act, every person who shall print any paper or book whatsoever, which shall be meant or intended to be published or dispersed, whether the same shall be sold or given away, shall print upon the front of every paper, if the same shall be printed on one side only, and upon the first and last leaves of every paper or book which shall consist of more than one leaf, in legible characters, his or her name, and the name of the city, town, parish, or place, and also the name (if any) of the square, street, lane, court, or place, in which his or her dwelling-house, or usual place of abode shall be; and every person who shall omit so to print his name and place of abode on every such paper or book printed by him, and also every person who shall publish or disperse, or assist in publishing or dispersing, either gratis or for money, any printed paper or book, which shall have been printed after the expiration of forty days from the passing of this Act, and on which the name and place of abode of the person printing the same shall not be printed as aforesaid, shall, for every copy of such paper so published or dispersed by him, forfeit and pay the sum of twenty pounds." Sect. 28. exempts papers printed by authority of either House of Parliament.

Sect. 29 enacts, "That every person who, from and after the expiration or forty days after the passing of this Act, shall print any paper for hire, reward, gain, or profit, shall carefully preserve and keep one copy (at least) of every paper so printed by him or her, on which he or she shall write, or cause to be written or printed, in fair and legible characters, the name and place of abode of the person or persons by whom he or she shall be employed to print the same: and every person printing any paper for hire, reward, gain, or profit, who shall omit or neglect to write, or cause to be written or printed as aforesaid, the name and place of his or her employer, on one of such printed papers, or to keep or preserve the same for the space of six calendar months next after the printing thereof, or to produce and shew the same to any justice of the peace, who, within the said space of six calendar months shall require to see the same, shall, for every such omission, neglect, or refusal, forfeit and lose the sum of twenty pounds."

Form of Notice to be given to the Clerk of the Peace, that any Person keeps any Printing Press or Types for Printing.

To the clerk of the peace for ——— [*here insert the county, stewartry, riding, division, city, borough, town, or place,*] *or his deputy.*

I, A. B. of ——— *do hereby declare that I have a printing press and types for printing, which I propose to use for printing within* ———, *and which I require to be entered for that purpose, in pursuance of an Act passed in the thirty-ninth year of His Majesty King George the Third, entitled, "An Act for the more effectual suppression of societies established for seditious and treasonable purposes, and for better preventing treasonable and seditious practices."*

Witness my hand this ——— *day of* ———.

Signed in the presence of ———.

An Act was passed on the 10th of June, 1811, to amend and explain the above Act, by which it is enacted, "That nothing in the 27th Section of the said Act contained, shall extend to make any person or persons offending against the same, liable to more than twenty-five forfeitures or penalties for printing or publishing, or dispersing, or assisting in publishing or dispersing, any number of copies of one and the same paper or book, contrary to the said Section of the said Act.

By the second Section of this Act, power is given to magistrates to mitigate the same to any sum not less than £5, with all reasonable costs incurred in the prosecution; and by the 4th Section, persons convicted under this amended Act may, if they think themselves aggrieved, appeal to the Quarter Sessions; where the justices, if they see cause, may mitigate any penalty or penalties, and may order any money to be returned which shall have been paid or levied under any conviction as aforesaid, and may also order and award such costs to be paid by either party to the other, as they shall think and judge reasonable.

The Act 60 Geo. III. Cap. 9, to subject certain publications to the duties of Stamps upon Newspapers, and to make other regulations for restraining the abuses arising from the publication of blasphemous and seditious libels. Dec. 30, 1819.

Sect. 1. All pamphlets and papers containing any public news, intelligence or occurrences, or any remarks or observations thereon, or upon any matter in church or state, printed in any part of the United Kingdom for sale, and published periodically, or in parts or numbers, at intervals not exceeding twenty-six days between the publication of any two such pamphlets or papers, parts or numbers, where any of the said pamphlets, &c. shall not exceed two sheets, or shall be published for sale for a less sum than sixpence, exclusive of the duty, shall be deemed and taken to be newspapers, agreeable to the Act of the 38th, Geo. III. and subject to all the rules, &c. of all former Acts regarding newspapers, &c.

Sect. 2. No quantity of paper less than 21 inches in length, and 17 in breadth, to be deemed a sheet.

Sect. 3. No cover or blank leaf upon which any advertisement or other notice shall be printed, shall be deemed part of a pamphlet.

Sect. 4. Publications of the above nature, at intervals exceeding 26 days, to be published on the first day of every calendar month, or within two days before or after. Penalty £20.

Sect. 5. The price and day of publication to be printed on all periodicals, penalty for omission £20; persons liable to the above penalty for selling, or exposing for sale, any of the said publications for a less price than sixpence.

Sect. 6. Price not to extend to the allowance made to distributors, who buy to sell again.

Sect. 7. Pamphlets liable to the Stamp duties freed from all regulations respecting pamphlets.

Sect. 8. Persons not to print or publish newspapers, &c. or pamphlets of two sheets or under, of the above description, without entering into recognizance, or giving bond for securing fines upon conviction for libels. Penalty £20.

Sect. 9. If sureties pay any part of the money for which they are bound, or become bankrupts, new recognizance or bond with sureties must be given. Penalty £20.

Sect. 10. Sureties may withdraw from their recognizances, upon giving twenty days previous notice in writing to the Commissioners or Distributors of Stamps in the district, and also to the printer or publisher; sureties not to be liable after the expiration of such notice. Bond or new sureties to be given before any more numbers are published, for every such offence, penalty £20.

Sect. 11. Bonds not subject to Stamp duties.

Sect. 12. Lists of recognizances to be sent to the Commissioners of Stamps four times a year: bonds within ten days after the execution.

Sect. 13. Extending the provisions of former Acts relative to the delivery of newspapers, &c. to the Commissioners of Stamps. Penalty for neglect of delivery of such pamphlets or papers, £100.

Sect. 14. Commissioners refusing to take any pamphlet or paper, to give, if required, a certificate of such refusal.

Sect. 15. Persons selling papers, &c. not duly stamped, to be fined £20.

Sect. 16. Recognizance, in case of libel, to be of good behaviour, as well as to appear to answer.

Sect. 17. Fines, penalties, &c. to be recovered by action of debt, bill, plaint or information, &c. not more than £100 to be recovered before Justices of the Peace, for any penalty incurred in one day.

Sect. 18. Two or more Justices to hear and determine offences committed against this Act, within the limitation of three months; magistrates have power to mitigate penalties to one fourth; reasonable costs, &c. must always be paid.

Sect. 19. Persons refusing to appear and give evidence, when summoned as witnesses, without satisfactory excuse to the magistrates, shall forfeit for each offence the sum of £20.

Sect. 21. Order or conviction of Justices not to be removed into any Court whatever, nor can the execution be superseded.

Sect. 22. No action for penalties shall be commenced but in the name of the Attorney General, in England and Ireland, and Advocate for Scotland, or some officer of the Stamp duties.

Sect. 23. Duties to be under the management of the Commissioners of Stamps.

Sect. 24. Duties and discounts to be paid and allowed according to the provisions of former Acts.

Sec. 26, contains the following exceptions: Acts, &c. &c. printed for Government, School Books, subjects on Devotion, &c. Daily Accounts, Bills of Goods imported and exported, Warrants and Certificates for the delivery of goods, Weekly Bills of Mortality, Lists of Prices Current, State of the Markets, Accounts of the Arrival and Sailing of Merchants' Ships, &c. &c. provided they contain nothing more than the usual matter.

Sect. 27. Reprinted works published in numbers, not chargeable with the stamp duty, provided that it had been printed two years, and not first published in parts or numbers.

CHAP. XVIII.

COMPOSITORS' AND PRESSMENS' SCALES OF PRICES.

We sincerely regret our having by far exceeded (particularly in this volume) the limits to which we had proposed to confine ourselves, otherwise we should have introduced the copy that now lies before us, wherein we have taken an impartial review of the passing events in the profession during the last twenty-five years, in which we have clearly laid open the conduct and views of the parties concerned, viz. the Employers, the Booksellers, and the Journeyman: and from that moment to the present, we have seriously regretted the occurrences that have taken place, which we never think of but with pain: and we doubt not that the principal actors in the events alluded to, have long, ere this, strongly felt the biting stings of conscience for their folly and short-sightedness: we forbear to particularize individuals, not wishing to wound their feelings beyond what we are firmly persuaded they must have already felt; but, as the late Earl Stanhope once observed to the late Lord Ellenborough, in the House of Lords, "If the saddle fits his Lordship, let him wear it:" so, in like manner, those who imagine that our allusion applies, we freely leave to wear the cap.

In the various conferences which have taken place between the masters and the men, we wonder much that no attempt has yet been made to define what description of work should come under the denomination of *Tabular*, and likewise what ought to be considered *Table*; we are free to admit, that the task would necessarily be attended with considerable labour, on account of the different descriptions of work which are continually occurring, as the applicability of the scale to one, would not exactly embrace the other; therefore a certain latitude should be taken; and the employer would fulfil his duty, not only to himself and the compositor, but also to the party by whom he was engaged, in making a fair and liberal decision as to the price of any description of extra work: by so doing, encouragement would be given for emulation, the Art would be advanced, together with his fame, and the person by whom he was employed would find an inward satisfaction (in the payment of the extra sum), on beholding his work turned out not only with credit to the printer, but also that he had assisted in the further improvement of the Art.

It was our attention (if the above cause had not prevented us) to have attempted drawing out of an equitable Scale of Prices, in lieu of the too loose and general one now in use; by so doing, we are fully aware that we should have been liable to the accusation of egotism, but even this would not have deterred us from our duty: notwithstanding which we humbly hope that the hint will not be altogether lost, but that some individual of consideration in the profession will step forward *and* assist in this most desirable object, which would immediately put an end to the perpetual bickerings between the employer and employed.

An account of the different Advances in Journeymen's Wages, from the Year 1785 to 1816, with the present Regulations and Scale of Prices.

In the early stages of the Art, the mode adopted for the payment of those employed must have been similar to that of every other branch of art or manufacture during its infancy, viz. on established wages. The idea of laying down fixed charges for different kinds of work, was not suggested for nearly two centuries after the discovery of our Art, nor indeed till the year 1785, had there been any regular scale of prices printed. From that time to the year 1805, several advances have taken place on the wages both of compositors and pressmen.

The scale of 1785, agreed to at a general Meeting of the Master Printers, held at the Globe-tavern in Fleet-street, on Friday the 20th of November, is as follows: also the succeeding advances, including the regulations and scale of 1805.

That the price of work paid for by letters, be advanced from fourpence to fourpence halfpenny per thousand, including English and Brevier; and, in leaded matter, the ems and ens at the beginnings and ends of the lines not to be reckoned in the width.

That pamphlets of five sheets and under, be paid one shilling per sheet above what they come to by letters.

That all works wholly printed in a foreign language, though common type, be paid fivepence per thousand.

That fivepence per thousand be paid for all dictionaries of two languages, in Brevier or larger type; but not for English dictionaries, unless attended with peculiar trouble.

That the price of Greek be advanced in the same proportion as that of common work.

At an adjourned Meeting of the Committee of Master Printers, on Monday the 11thday of March, 1793, in consequence of a circular letter from the Compositors, dated the 14th of February last, requesting,

1. That all works be cast up with the heads and directions inclusive:

2. That ems and en quadrats, or whatever is used at the ends of lines, be included as in the above article:

The Committee, having held a conference with a deputation from the compositors at large, agree to recommend to the Master Printers to comply with the first request; understanding that the head line (whether larger or smaller) is to be reckoned like the text; and that, where the length of the page is not exact even ems, if it does not exceed an en, it is not to be considered as a line.—Directions and signatures to be reckoned in the gauge.

The above increase of price to commence on Lady-day, but not to extend to any works at that time unfinished. In periodical works, to commence with the next new volume after Lady-day.

At a General Meeting of the Master Printers, at the Globe-tavern, December 18, 1795, convened by the Committee, to consider of certain propositions submitted to them by the Compositors—It was resolved,

That from the 1st of January, 1796, all works printed in a larger type than English, shall be cast up wholly as English.

At a Meeting, in December 24, 1800, of the Master Printers of London and Westminster, held for the purpose of taking into further consideration the state of the trade, both in respect to the workmen and their employers—

It was stated, that a general dissatisfaction still remained among the compositors, concerning the advances granted them at a former Meeting, (Nov. 29,) they expecting to have had an additional allowance of one halfpenny per thousand on works printed from manuscript copy.

The same was taken into consideration; and, upon deliberate discussion, it was found impracticable to comply with their expectation; the Meeting being convinced, that to make any distinction between manuscript and reprint would be an unjustifiable departure from the established and long-approved principles by which works have been appreciated. But, considering the extreme and increasing pressure of the times (the article of bread alone having risen to the unusual price of one shilling and sevenpence halfpenny the quartern loaf,) it was resolved—

That, upon the first article of the compositors' scale, one farthing more per thousand be allowed in general, without making any distinction between manuscript and reprint; to take place on all works begun on or after the 1st of January, 1801.

The following is the composition scale as now amended:

I. That the scale of 1785 (whereby an advance of two shillings and sixpence in the pound was given)—as amended in 1793 (when the further advance of including head-lines and directions was acceded to)—and as subsequently amended in 1796 (respecting works done in larger type than English)—is a fair and applicable scale to judge and appreciate work by.

II. That the following further advances and regulations be made on the above scale:

1. That the price of works paid for by letters be advanced from fourpence halfpenny to fivepence farthing per thousand, including English and Brevier.

2. That all works printed in any foreign language, though common type, be advanced to fivepence three farthings per thousand, including English and Long Primer.—In Bourgeois or Brevier, to sixpence per thousand.

3. That all dictionaries of two or more languages, in Brevier or larger type, in quarto and octavo, be advanced to fivepence halfpenny per 1000; if in duodecimo or eighteens, to sixpence per thousand.

4. That corrections be advanced to fivepence per hour.

III. That jobs, and other works not specified in the above prices, or in the annexed schedule, bear a proportionate advance.

Job Masters' Resolutions, viz.

1. That every article under one sheet be considered a job, and be paid sixpence halfpenny per thousand.—Threepence to be considered as sixpence; under threepence to be lost.

2. One sheet and under five to be cast up as usual, with one shilling a sheet for the imposing.

3. Corrections on all jobs to be paid sixpence per hour.

4. All jobs, not hitherto paid by letters, to be allowed sixpence in every three shillings.

5. All jobs in foreign languages to be paid sevenpence halfpenny per thousand.

6. The imprint not to be included in the square of the page.

7. Jobs having two or three head rules, and four columns, to be considered tabular; all above to be reckoned table-work. The first to be paid one and one-half; the second double price.

At a Meeting held on the 19th of February, 1805, and at two subsequent adjourned Meetings on the 20th and 26th, at the York Hotel, New Bridge-street; the Deputations consisted of eight Masters and an equal number of Compositors, duly authorized by their respective bodies, when the scale of 1801 was re-considered and several additions made, particularly the article on Bottom Notes, which was then first inserted; but this article was not sufficiently explicit, and in the month of May following, the Masters issued a paragraph explaining their view of the subject; but many of the Compositors differed from them: the truth was, the Masters at length found out that they had not sufficiently been aware of the construction which the article would bear at the time it was granted. The Compositors made a proposition respecting Notes, but the Masters objected to it, and proposed the one adopted in lieu of it: therefore it was a child of their own.

COMPOSITORS' SCALE OF PRICES.

Agreed upon at a General Meeting of Master Printers, at Stationers' Hall, April 15, 1810.

Article 1. *All works in the English language, common matter, with space lines, including English and Brevier, to be cast up at fivepence three farthings per thousand; if in Minion sixpence; in Nonpareil, sixpence three farthings.* Without space lines, *including English and Brevier, sixpence per thousand; in Minion, sixpence farthing; in Nonpareil, sevenpence; in Pearl,* with or without space lines, *eightpence; heads and directions, or signature lines, included. A thick space to be considered as an en in the width, and an en to be reckoned an em in the length of the page; and where the number of letters amounts to five hundred, a thousand to be charged; if under five hundred, not to be reckoned; and if the calculation at per thousand shall not amount to an odd threepence, the odd pence to be suppressed in the price of the work; but where it amounts to or exceeds threepence, there shall be sixpence charged. Em and en quadrats, or whatever is used at the beginning or end of lines, to be reckoned as an em in the width.*

2. *Works printed in Great Primer to be cast up as English; and all works in larger type than Great Primer, as half English and half Great Primer.*

3. *All works in foreign languages, though common type,* with space lines, *including English and Brevier, to be cast up at sixpence farthing per thousand; if in Minion, sixpence three farthings; Nonpareil sevenpence halfpenny.* Without space lines, *including English and Brevier, sixpence halfpenny; Minion sevenpence; Nonpareil sevenpence three-farthings: and Pearl,* with or without space lines, *eightpence three farthings.*

4. *English Dictionaries of every size*, with space lines, *including English and Brevior, to be paid sixpence farthing*; without space lines, *sixpence halfpenny. (In this article are not included Gazetteers, Geographical Dictionaries, Dictionaries of Arts and Sciences, and works of a similar description, except those attended with extra trouble beyond usual descriptive matter). Dictionaries of two or more languages, of every size, with space lines, including English and Brevier, to be paid sixpence halfpenny*: without space lines,* *sixpence three farthings; if smaller type than Brevier, to take the proportionate advance specified in Article* 1.

5. *English Grammars, Spelling Books, and works of those descriptions, in Brevier or larger type*, with space lines, *to be paid sixpence per thousand*; without space lines *sixpence farthing: if in two languages, or foreign language*, with space lines, *sixpence farthing*; without space lines, *sixpence halfpenny.*

6. *Small-sized Folios, Quartos, Octavos, and works done in Great Primer or larger type, (English language,) which do not come to seven shillings when cast up at the usual rate, to be paid as follows: English, and larger type, not less than seven shillings; Pica, eight shillings and sixpence: English* 12mo. *to be paid not less than ten shillings and sixpence; and Pica not less than eleven shillings and sixpence per sheet.*

7. *Reviews, Magazines, and works of a similar description, consisting of various sized letter, if cast up to the different bodies, to be paid two shillings and sixpence per sheet extra.*

8. *Pamphlets of five sheets and under, and parts of works done in different houses, amounting to not more than five sheets, to be paid one shilling per sheet extra; but, as it frequently occurs that works exceeding a pamphlet are often nearly made up without a return of letter, all such works shall be considered as pamphlets, and paid for as such.*

9. *Works done in Sixteens, Eighteens, Twenty-fours, or Thirty-twos, on Small Pica and upwards, to be paid one shilling and sixpence per sheet extra. If on Long Primer or smaller type, one shilling per sheet extra. Forty-eights to be paid two shillings per sheet extra, and Sixty-fours two shillings and sixpence per sheet extra.*

10. *Works requiring an alteration or alterations of margin, to be paid, for each alteration, one shilling per sheet to the Pressmen if altered by them, and six-pence to the Compositor, as a compensation for making up the furniture; if altered by*

* There is no justice in bringing leads of every description under one denomination: we contend, that the thickness of the lead should be guided by the size of the type and width of the measure: what equality is there between an English 12mo, and one in Long Primer, or any smaller size; or as to duodecimos and 4tos. &c. Equity should ever be the standard by which laws and regulations are made; therefore we trust the above hint will induce gentlemen to draw a line in this respect, and not bring leads which are a loss into this sweeping clause.

the Compositor, then he is to be paid one shilling for the alteration, and the Pressmen sixpence for the delay.

This article to be determined on solely at the option of the employer.

11. *Bottom Notes consisting of twenty lines (or two notes, though not amounting to twenty lines) and not exceeding four pages, in every ten sheets, in Quarto or Octavo :—one page, (or two notes, though not amounting to one page) and not exceeding six pages, in Twelves: two pages (or two notes, though not amounting to two pages) and not exceeding eight, in Eightcens or above, to be paid one shilling per sheet; but under the above proportion no charge to be made. Bottom Notes, consisting of ten lines (or two notes, though not amounting to ten lines) in a pamphlet of five sheets or under, and not exceeding two pages, to be paid one shilling per sheet extra. Quotations, Mottos, Contents to Chapters, &c. in smaller type than the body, to be considered as Notes.* [*Where the Notes shall be in Nonpareil or Pearl, in Twelves, the number of pages to be restricted to four; in eighteens to five pages.*]

This article is intended only to fix what constitutes the charge of one shilling per sheet for Bottom Notes: all works requiring a higher charge than one shilling for Bottom Notes, are to be paid for according to their value.

12. *Side Notes to Folios and Quartos not exceeding a broad quotation, if only chap. or date, and not exceeding three explanatory lines on an average in each page, to be paid one shilling per sheet; in Octavo, if only chap. or date, and not exceeding three explanatory lines on an average in each page, one shilling and sixpence per sheet. Cut-in Notes, in smaller type than the body, to be paid for in a similar manner.*

Side and Bottom Notes to many, particularly historical and law works, if attended with more than ordinary trouble, to be settled between the employer and journeyman.

13. *Greek, Hebrew, Saxon, &c. or any of the dead characters, if one word and not exceeding three lines in any one sheet, to be paid for that sheet one shilling extra; all above to be paid according to their value.*

14. *Greek* with space lines, *and without accents, to be paid eightpence halfpenny per thousand; if with separate accents tenpence:* without space lines, *and without accents, eightpence three farthings; with accents, tenpence farthing; the asper not to be considered an accent.* [*If Dictionary matter, to take one halfpenny advance.*]

15. *Hebrew, Arabic, Syriac, &c. to be paid double: Hebrew with points to be cast up as half body and half points doubled.*

16. *Music to be paid double the body of the sonnet type.*

17. *Index matter, though but one measure, to be paid two shillings per sheet extra.*

18. *Booksellers' Catalogues (in whatever language) to be cast up at sevenpence per thousand, not including the numbering.*

19. *Night work to commence and be paid for, from ten o'clock till twelve, one shilling; all after to be paid threepence per hour extra till six.---Morning work, commencing at four o' Clock, to be paid one shilling extra.---Sunday work, if not exceeding six hours, to be paid for one shilling, if for a longer time, twopence an hour.*

20. *Jobs of one sheet or under (except Auctioneers' Catalogues and Particulars) to be cast up at seven pence per thousand; if done in smaller type than Brevier, to take the proportionate advance specified in Article 1; if in foreign language of one sheet or under, (except Auctioneers' Catalogues,) to be cast up at eightpence per thousand; if done in smaller type than Brevier, to take the proportionate advance specified in Article 1.*

21. *Where two pages only are imposed, either opposite to, or at the back of each other, they shall be paid for as two pages; but if with an indorse, or any other kind of matter, constituting a third, then to be paid as a sheet if in Folio, a half-sheet if in Quarto, and so on.*

22. *Broadsides, such as Leases, Deeds, and Charter-parties, above the dimensions of crown, whether table or common matter, to be paid the double of common matter; on crown and under, to be paid one and one half common matter.---The indorse to be paid one fourth of the inside page, as common matter.*

23. *All Corrections to be paid sixpence per hour.*

24. *The Imprint to be considered as two lines in the square of the page.*

25. *Different volumes of the same work to be paid for distinctly, according to their value.*

At a Meeting of Master Printers held January 2, 1810, pursuant to notice, for the purpose of taking into consideration the state of the Trade in general, in consequence of the alteration in the times;

It was the opinion of this Meeting, that it would be highly expedient, that after the 19th of February, the following modification of the Compositors' Scale of Prices of 1810, as far as regards Reprints, and of the Pressmens' Scale of Prices, as far as regards all Numbers exceeding the first 1000, should take place.

IN THE COMPOSITORS' SCALE.

All Reprinted Works to be paid three farthings per 1000 less than the Scale of 1810. All manuscript or original Works shall continue to be paid for as at present.

IN THE PRESSMENS' SCALE.

Every Token above the first Four Tokens to be paid one halfpenny per hour less than the Scale of 1810.

Resolved, That the Master Printers be requested to communicate the above to their respective Journeymen.

ABSTRACT OF THE COMPOSITORS' SCALE.

	COMMON	FOREIGN	DICTIONARIES.		GRAMMARS, &c.		GREEK.	
			English.	Languages or Foreign.	English.	Languages or Foreign.	Without Accents.	With Accents.
	d.	d.	d.	d.	d.	d.	d.	d.
ENGLISH to BREVIER.... leaded	5½	6¼	6½	6½	6	6½	8½	10
ENGLISH to BREVIER.... solid..	6	6¼	6½	6½	6½	6½	8½	10½
MINION..... leaded	6	6½	6½	7				e
MINION..... solid..	6½	7	7	7½				
NONPAREIL.. leaded	6½	7½	7½	7½				
NONPAREIL.. solid..	7	7½	7½	8				
PEARL. leaded or solid.....	8	8½	8½	9				

NOTES *constituting the Charge of One Shilling per Sheet.—See Article* 11.

Quarto and Octavo..	20 Lines. or 2 Notes	and not exceeding 4 Pages in 10 Sheets.
Twelves	1 Page or 2 Notes	and not exceeding 6 Pages in 10 Sheets.
Eighteens or above..	2 Pages or 2 Notes	and not exceeding 8 Pages in 10 Sheets.
Pamphlets.....	10 Lines or 2 Notes	and not exceeding 2 Pages in 5 Sheets.

A Table shewing the Price of any Number of Letters from 16,000 to 100,000 at 5d. per Thousand.

Th	s.	d.	Th	s.	d.	Th	s.	d.	Th	s.	d.	Th	s	d
17	7	1	34	14	2	51	21	3	68	28	4	85	35	5
18	7	6	35	14	7	52	21	8	69	28	9	86	35	10
19	7	11	36	15	0	53	22	1	70	29	2	87	36	3
20	8	4	37	15	5	54	22	6	71	29	7	88	36	8
21	8	9	38	15	10	55	22	11	72	30	0	89	37	1
22	9	2	39	16	3	56	23	4	73	30	5	90	37	6
23	9	7	40	16	8	57	23	9	74	30	10	91	37	11
24	10	0	41	17	1	58	24	2	75	31	3	92	38	4
25	10	5	42	17	6	59	24	7	76	31	8	93	38	9
26	10	10	43	17	11	60	25	0	77	32	1	94	39	2
27	11	3	44	18	4	61	25	5	78	32	6	95	39	7
28	11	8	45	18	9	62	25	10	79	32	11	96	40	0
29	12	1	46	19	2	63	26	3	80	33	4	97	40	5
30	12	6	47	19	7	64	26	8	81	33	9	98	40	10
31	12	11	48	20	0	65	27	1	82	34	2	99	41	3
32	13	4	49	20	5	66	27	6	83	34	7	100	41	8
33	13	9	50	20	10	67	27	11	84	35	0			

We have introduced the above table in consequence of the alteration which took place respecting re-prints: and it is with pain we learn that most of our brethren act too harshly in the construction which they are pleased to put upon it: for our own parts, we do consider that a fair and liberal meaning should always be applied, and not one which bears hard upon the weakest party: our view of it is, that no work can strictly be considered as coming under the denomination of a re-print, unless the compositor can go on fairly and make up his matter regularly, not if he is in the least kept at random; also, if the copy had been printed with a thick letter, and the compositor has to compose a thin one, he would then have the trouble of extra spacing in every line: should his copy have been executed with thin, and he have to compose a thick type, he would then be necessitated to thin space each line to get it in, and would sometimes have to overrun the paragraphs down to the break lines, although not a single alteration should have been made; therefore can any one with justice contend that such works come within the strict meaning of the term, certainly not: we likewise object to printed copy with any additions, or emendations, however trifling they may be; because the compositor, in such cases, must be at random, and suffer all the inconvenience of an original work; it is too well known to all practical printers, that a compositor is much more retarded in his progress by composing from printed copy with interlineations, than what he would be from any thing like a fair manuscript before him: therefore gentlemen should act liberally in this respect, and not pursue the system of grinding the compositors too close, thereby destroying that reciprocality of interest, which throughout this work we have endeavoured to establish the necessity of it to both parties.

PRESSMENS' SCALE OF PRICES.

Agreed upon at a General Meeting of the Master Printers, at Stationers' Hall, Feb. 8, 1810.

	1000 & upwards	750 & 500	250
FOLIOS.			
On Medium or Demy.			
Not exceeding fifty-two Pica ems, upon Small Pica and upwards	5	5½	6
Upon Long Primer, Bourgeois, or Brevier	5½	6	7
All above fifty-two Pica ems, upon Small Pica and upwards	5½	6	7
If on Long Primer, Bourgeois, or Brevier	6	6½	7
Long Primer and upwards, on Copy or Crown	5	5½	6
QUARTOS.			
On Medium or Demy.			
Not exceeding forty Pica ems, upon Long Primer and upwards	5	5½	6
If on Bourgeois, or Brevier	5½	5½	6
All above forty Pica ems, and not less than Long Primer	5½	5½	7
If on Bourgeois, or Brevier	6	6	7
Brevier and upwards, on Copy or Crown	5	5½	6
OCTAVOS.			
On Medium or Demy.			
Not exceeding twenty-four Pica ems, upon Small Pica and upwards	5	5½	6
If on Long Primer, Bourgeois, or Brevier	5	5½	7
All above twenty-four Pica ems, on Brevier, or upwards	5½	6	7
If less than Brevier	6	6½	8
Brevier and upwards, on Copy or Crown	5	5½	6
TWELVES.			
On Medium or Demy.			
Not exceeding twenty-one Pica ems, upon Long Primer and upwards	5	5½	7
If on Bourgeois, or Brevier	5½	6	7
All above twenty-one Pica ems, upon Long Primer and upwards	5½	7	8
If on Bourgeois, or Brevier	6	7	8
Long Primer, Bourgeois, or Brevier, on Copy or Crown	5	5½	7
EIGHTEENS.			
If not less than Small Pica	5	5½	7
If on Long Primer, Bourgeois, or Brevier	5½	6	7
If less than Brevier	6	7	8
TWENTY-FOURS AND THIRTY-TWOS.			
If not less than Small Pica	5½	6	7
If on Long Primer, Bourgeois, or Brevier	6	7	8
If less than Brevier	6½	8	9

POCKET BOOKS.	1000 & upwards	500 to 1000	250
Octavo.			
Post or Crown, twenty-one Pica ems wide, thirty-five long	5	6	7
Twelves.			
Pot, such as Ladies and Christian Ladies table part, 6mo. thirty-five Pica ems wide, twenty-six long	5	6	7
Pot, such as Ladies and Christian Ladies miscellany part, sixteen Pica ems wide, twenty-six long	5	6	7
Copy, Christian Gentleman's, twenty wide, thirty-five long	5	6	7
SCHOOL BOOKS.			
Twelves.			
Copy or Crown, not exceeding seventeen Pica ems wide, and thirty-one long, nor less than Brevier	5	6	7
Octavo.			
Copy or Crown, not exceeding twenty-one Pica ems wide, nor less than Long Primer	4½	5½	6

N. B. School books on Copy or Crown, are defined to be Palairet's French Grammar, Chambaud, Salisbury Spelling Book, Fox's Lessons, Ward's Latin Grammar, and all of a similar description.

BILLS IN PARLIAMENT.	
From 4 to any No. under 100	4½
If 100 and under 200	5
If 200 or 250	5½
Above 250 & under 400	4½
If 400 or 500	5
Above 500 & under 700	4½
If 700 or 750	5
All above 750	4½
ALMANACKS.	
Royal Broadsides	7

Almanacks	
Demy do. size Wing or Cambridge	5½
Goldsmith, calendar form	5½
Ditto prog	5
Twelves demy, 19 wide, 34 long, cal.	5½
Ditto, prog	5
Ditto Crown, size Rider	5
Octavo Foolscap, 20 wide, 34 long, cal. & prog.	8

N. B. Side Notes to be reckoned in the width, bottom Notes not to be regarded.

Works on Royal paper to be paid one halfpenny per hour more than the above prices.—Ditto on Foolscap or Pot, not less number than one thousand, and worked at one pull, fourpence halfpenny.—Ditto in square pages (like Entick's Dictionary) and works for the Public Offices, to be advanced one halfpenny per hour on the Scale of 1800.

Fine paper of the same size, if included within the token, not to be charged extra; but if of a larger size, then to be paid according to the Scale.

Three or more proofs pulled at one time to be charged fourpence per form: and if made ready, to be charged as a token.

Cards, large or small, to be paid sixpence-halfpenny per hundred.

Double Crown or Royal Broadsides, not exceeding one hundred number, to be paid one shilling and sixpence; if more than one hundred, to be paid one shilling per hundred.

Jobs, without points, to be paid fourpence halfpenny per hour.

Demy Broadsides, not more than 100, to be paid one shilling; above 100, and not exceeding 500, to be paid tenpence per 100; if above 500, to be paid at the rate of one shilling and ninepence per Token.

Broadsides requiring three pulls to be paid one-third more.

No form to be deemed a Broadside that comes in at one pull at the common press.

For Night work, &c. see Compositors' Scale, No. 19.

The following Scale, with the remarks, was taken from a well digested Report of the Committee of News Compositors, which was read July 20, 1820.

ABSTRACT OF THE SCALE.

	Per Week.	Per Galley.	Per Hour.
Morning Papers	£2 8s. 0d.	3s. 10d.	11½d.
Evening Papers	£2 3s. 6d.	3s. 7d.	10½d.

Assistants on other Journals are paid the same as Evening Papers; the Sunday Papers, having their gallies of various lengths, are paid at the rate of 8½*d.* per thousand, or 10*d.* per hour.

Long Primer and Minion galleys, cast as nigh 5,000 letters as possible (at present varying from that number to 5,200, partly arising from a variation in the founders standards) are, per thousand, on

	Morning.	Evening.
Long Primer and Minion ...	9*d.*	8½*d.*
Nonpareil	10*d.*	9½*d.*
Pearl	11*d.*	10½*d.*

Or a reduction, in proportion to value, on the galley quantity.

The galley on Morning Papers consists of 120 lines Long Primer, and 40 *after lines*---Minion 88, and 30 *after lines*---on Papers 22 ems Long Primer wide; other widths in proportion; and a *finish* of five hours. Another *mode* is, one galley and a *finish* of six hours. Twelve hours on and 12 off (including refreshment time), was the original agreement.

The *time* of beginning to be the same uniformly as agreed upon by the Printer and Companionship---*i. e.* either a two, three, or four o'Clock Paper---and at whatever hour the Journal goes to press one morning, regulates the hour of commencing work for the next day's publication, provided it should be over the hour originally agreed upon---if under,

the time is in the Compositors' favour. The hour of commencing work on Sunday is regulated by the time of finishing on Saturday morning.

Ten hour's composition is the specified time for Evening Papers---All composition to cease when the day's publication goes to press; any work required afterwards to be paid for extra, or deducted from the first work of the next publication.---This does not apply to *Second Editions*; they being connected solely with the antecedent Paper, must be paid for extra. Newspapers in a foreign language take, of course, the same advance as is allowed on book-work.

A system termed *Finishing* having been formerly introduced, it is necessary to state, that no mode of working can be considered fair (except as before stated), otherwise than by the galley or hour.

N. B. No Apprentices to be employed on Daily Papers.

In 1776 (the commencement of the American War) appeared the first daily Reports of the Debates in Parliament.

In 1777, there were seven Morning, eight three times a week, one twice a week, and one Weekly Paper. In 1778, appeared the first Sunday paper, entitled, *Johnson's Sunday Monitor*, which, up to the present day, still continues to stand well in the Public estimation: in a few weeks it was followed by a second; and a third was brought out in the succeeding year. In 1784 another Journal started, in which Minion was first introduced. The old method of display was discarded, and a new taste appeared in the arrangement of the matter in the inner form, and the former advertisement style was completely exploded. Rivalry commenced and the other papers soon made a correspondent change.

In 1788 appeared the first *Daily* Evening Paper; this was followed by a second, in 1791.

From 1785 to 1793 the Journals underwent a most material alteration. It was a remarkable epoch, including the most eventful seven years of the last century, which caused a strong political feeling in the public mind; of course information from all quarters was eagerly sought, and party spirit with the Editors, as well as with their Readers, rose to the utmost height. In this period nineteen new Journals put forth their claims for public support---the majority, however, were "born but to die."---Two of the elder papers also expired; but their places were occupied by *seven* juniors. The number now amounted to eleven Morning and two Evening Papers: seven, three times a week; one Weekly, and five Sunday Papers. An alteration in the method of display, and a new mode in the arrangement of the matter, became now very general. One Journal introduced French rules, the small capitals for paragraphs, and discarded the double letters and the *long s*.

A Table, shewing the Number of Thousands in a Sheet of Thirty-twos, Eighteens, Twelves, Octavo, Quarto, and Folio, of various Sizes.

The figures over each class denote the number of lines long; those in the first column the number of ems wide, and those with the asterisk and italic letters *a, e, i, o, u, f,* above the number of thousands in a sheet of *thirty-twos, eighteens, twelves, octavo, quarto,* and *folio.*—When the odd numbers above the respective thousands in each sheet, amount to five hundred, another thousand is allowed; if less than five hundred, they are not reckoned.

20				21				22				23				24			
18	23*	13e	19	26*	14e	20	28*	16e	21	31*	17e	22	34*	19e	13f
19	24	14	20	27	15	21	30	17	22	32	18	23	35	20	13
20	26	14	21	28	16	22	31	17	23	34	19	24	37	21	14
21	27	15	22	30	17	23	32	18	24	35	20	25	38	22	14
22	28	16	23	31	17	24	34	19	25	37	21	26	40	22	15
23	29	17	24	32	18	25	35	20	26	38	22	27	41	23	16
24	31	17	25	34	19	26	37	21	27	40	22	28	48	24	16
25	32	18	26	35	20	27	38	21	28	41	23	29	45	25	17

25				26				27				28			
23	37*	21e	14f	24	40*	22e	15f	25	43*	24e	16f	26	47*	26e	17f
24	38	22	14	25	42	23	16	26	45	25	17	27	48	27	18
25	40	23	15	26	43	24	16	27	47	26	17	28	50	28	19
26	42	23	16	27	44	25	17	28	48	27	18	29	52	29	19
27	43	24	16	28	47	26	17	29	50	28	19	30	54	30	20
28	45	25	17	29	48	27	18	30	52	29	19	31	56	31	21
29	46	26	17	30	50	28	19	31	54	30	20	32	57	32	22
30	48	27	18	31	52	29	19	32	55	31	21	33	59	33	22

29				30				31				32			
27	50*	28e	19f	28	54*	30e	20f	29	58*	32e	22f	30	61*	35e	23f
28	52	29	19	29	56	31	21	30	60	33	22	31	63	36	24
29	54	30	20	30	58	32	22	31	62	35	23	32	66	37	25
30	56	31	21	31	60	33	22	32	63	36	24	33	68	38	25
31	58	32	22	32	61	35	23	33	65	37	25	34	70	39	26
32	59	33	22	33	63	36	24	34	67	38	25	35	72	40	27
33	61	34	23	34	65	37	24	35	69	39	26	36	74	41	28
34	63	35	24	35	67	38	25	36	71	40	27	37	76	43	28

33				34				35			
31	65*	37e	25f	160	32	70*	39e	26f	170	33	74*	42e	28f	180
32	68	38	25	17	33	72	40	27	18	34	76	43	29	19
33	70	39	26	17	34	74	42	28	18	35	78	44	29	20
34	72	40	27	18	35	76	43	29	19	36	81	45	30	20
35	74	42	28	18	36	78	44	29	20	37	83	47	31	21
36	76	43	29	19	37	81	45	30	20	38	85	48	32	21
37	78	44	29	20	38	83	47	31	21	39	87	49	33	22
38	80	45	30	20	39	85	48	32	21	40	90	50	34	22

36					37					38				
34	78*	44c	29t	20o	35	83*	47c	31t	21o	36	88*	49c	33t	22o
35	81	45	30	20	36	85	48	32	21	37	90	51	34	22
36	83	47	31	21	37	88	49	33	22	38	92	52	35	23
37	86	48	32	21	38	90	51	34	22	39	95	53	36	24
38	88	49	33	22	39	92	52	35	23	40	97	55	36	24
39	90	51	34	22	40	95	53	36	24	41	100	56	37	25
40	92	52	35	23	41	97	55	36	24	42	102	57	38	26
41	94	53	35	24	42	99	56	37	25	43	105	59	39	26

39					40					41				
37	92*	52c	35t	23o	38	97*	55c	36t	24o	39	102*	58c	38t	26o
38	95	53	36	24	39	100	56	37	25	40	105	59	39	26
39	98	55	37	24	40	102	58	38	26	41	108	61	40	27
40	100	56	37	25	41	105	59	39	26	42	110	62	41	28
41	102	58	38	26	42	108	60	40	27	43	113	63	42	28
42	105	59	39	26	43	110	62	41	28	44	115	65	43	29
43	107	60	40	27	44	113	63	42	28	45	118	66	44	30
44	110	62	41	27	45	115	65	43	29	46	121	68	45	30

42					43					44				
40	108*	60c	40t	27o	41	113*	63c	42t	28o	42	118*	67c	44t	30o
41	110	62	41	28	42	116	65	43	29	43	121	68	45	30
42	113	64	42	28	43	118	67	44	30	44	124	70	46	31
43	116	65	43	29	44	121	68	45	30	45	127	71	48	32
44	118	67	44	30	45	124	70	46	31	46	129	73	49	32
45	121	68	45	30	46	127	71	47	32	47	132	74	50	33
46	124	70	46	31	47	130	73	49	32	48	135	76	51	34
47	126	71	47	32	48	132	74	50	33	49	138	78	52	34

45					46					47				
43	124*	70c	46t	31o	44	130*	73c	49t	32o	45	135*	76c	51t	34o
44	127	71	48	32	45	132	75	50	33	46	138	78	52	35
45	130	73	49	32	46	135	76	51	34	47	141	80	53	35
46	132	75	50	33	47	138	78	52	35	48	144	81	54	36
47	135	76	51	34	48	141	79	53	35	49	147	83	55	37
48	138	78	52	35	49	144	81	54	36	50	150	85	56	38
49	141	79	53	35	50	147	83	55	37	51	153	86	58	38
50	144	81	54	36	51	150	84	56	38	52	156	88	59	39

48					49					50				
46	141*	79c	53t	36o	47	147*	83c	55t	37o	48	154*	86c	58t	38o
47	144	81	54	36	48	151	85	56	38	49	157	88	59	39
48	147	83	55	37	49	154	86	58	38	50	160	90	60	40
49	151	85	56	38	50	157	88	59	39	51	163	92	61	41
50	154	86	58	38	51	160	90	60	40	52	166	94	62	42
51	157	88	59	39	52	163	92	61	41	53	170	95	64	42
52	160	90	60	40	53	166	93	62	42	54	173	97	65	43
53	163	92	61	41	54	169	95	64	42	55	176	99	66	44

51					52					53				
49	90	60	40	20q	50	94	62	42	21q	51	97	65	43	22q
50	92	61	41	20	51	96	64	42	21	52	99	66	44	22
51	94	62	42	21	52	97	65	43	22	53	101	67	45	22
52	95	64	42	21	53	99	66	44	22	54	103	69	46	23
53	97	65	43	22	54	101	67	45	22	55	105	70	47	23
54	99	66	44	22	55	103	69	46	23	56	107	71	47	24
55	101	67	45	22	56	105	70	47	23	57	109	73	48	24
56	103	69	46	23	57	107	71	47	24	58	111	74	49	25

54					55					56				
52	101	67	45	22q	53	105	70	47	23q	54	109	73	48	24q
53	103	69	46	23	54	107	71	48	24	55	111	74	49	25
54	105	70	47	23	55	109	73	48	24	56	113	75	50	25
55	107	71	48	24	56	111	74	49	25	57	115	77	51	26
56	109	73	48	24	57	113	75	50	25	58	117	78	52	26
57	111	74	49	25	58	115	77	51	26	59	119	79	53	26
58	113	75	50	25	59	117	78	52	26	60	121	81	54	27
59	115	76	51	25	60	119	79	53	26	61	123	82	55	27

57					58					59				
56	113	75	50	25q	56	117	78	52	26q	57	121	81	54	27q
56	115	77	51	26	57	119	79	53	26	58	123	82	55	27
57	117	78	52	26	58	121	81	54	27	59	125	84	56	28
58	119	79	53	26	59	123	82	55	27	60	127	85	57	28
59	121	81	54	27	60	125	84	56	28	61	130	86	58	29
60	123	82	55	27	61	127	85	57	28	62	132	88	59	29
61	125	83	56	28	62	129	86	58	29	63	134	89	59	30
62	127	85	57	28	63	132	88	59	29	64	136	91	60	30

60					61					62				
58	125	84	56	28q	59	130	86	58	29q	60	134	89	60	30q
59	127	85	57	28	60	132	88	59	29	61	136	91	61	30
60	130	86	58	29	61	134	89	60	30	62	138	92	62	31
61	132	88	59	29	62	136	91	61	30	63	141	94	62	31
62	134	89	60	30	63	138	92	61	31	64	143	95	63	32
63	136	91	60	30	64	141	94	62	31	65	145	97	64	32
64	138	92	61	31	65	143	95	63	32	66	147	98	65	33
65	140	94	62	31	66	145	97	64	32	67	150	100	66	33

63					64					65				
61	138	92	61	31q	62	143	95	63	32q	63	147	98	66	33q
62	141	94	62	31	63	145	97	65	32	64	150	100	67	33
63	143	95	64	32	64	147	98	66	33	65	152	101	68	34
64	145	97	65	32	65	150	100	67	33	66	154	103	69	34
65	147	98	66	33	66	152	101	68	34	67	157	105	70	35
66	150	100	67	33	67	154	103	69	34	68	159	106	71	35
67	152	101	68	34	68	157	104	70	35	69	161	108	72	36
68	154	103	69	34	69	159	106	71	35	70	164	109	73	36

66					67					68				
64	101	68	34	17	65	105	70	35	17	66	108	72	36	18
65	103	69	34	17	66	106	71	35	18	67	109	73	36	18
66	105	70	35	17	67	108	72	36	18	68	111	74	37	18
67	106	71	35	18	68	109	73	36	18	69	113	75	38	19
68	108	72	36	18	69	111	74	37	18	70	114	76	38	19
69	109	73	36	18	70	113	75	38	19	71	116	77	39	19
70	111	74	37	18	71	114	76	38	19	72	118	78	39	20
71	112	75	37	19	72	116	77	39	19	73	119	79	40	20

69					70					71				
67	111	74	37	18	68	114	76	38	19	69	118	78	39	20
68	113	75	38	19	69	116	77	39	19	70	119	80	40	20
69	114	76	38	19	70	118	78	39	20	71	121	81	40	20
70	116	77	39	19	71	119	80	40	20	72	123	82	41	20
71	118	78	39	20	72	121	81	40	20	73	124	83	41	21
72	119	79	40	20	73	123	82	41	20	74	126	84	42	21
73	121	81	40	20	74	124	83	41	21	75	128	85	43	21
74	123	82	41	20	75	126	84	42	21	76	130	86	43	22

72					73					74				
70	121	80	40	20	71	124	83	41	21	72	128	85	43	21
71	123	82	41	20	72	126	84	42	21	73	130	86	43	22
72	124	83	41	21	73	128	85	43	21	74	131	88	44	22
73	126	84	42	21	74	130	86	43	22	75	133	89	44	22
74	128	86	43	21	75	131	88	44	22	76	135	90	45	22
75	130	86	43	22	76	133	89	44	22	77	137	91	46	23
76	131	88	44	22	77	135	90	45	23	78	139	92	46	23
77	133	89	44	22	78	137	91	46	23	79	140	94	47	23

75					76					77				
73	131	88	44	22	74	135	90	45	22	75	139	92	46	23
74	133	89	44	22	75	137	91	46	23	76	140	94	47	23
75	135	90	45	23	76	139	92	46	23	77	142	95	47	24
76	137	91	46	23	77	140	94	47	23	78	144	96	48	24
77	139	92	46	23	78	142	95	47	24	79	146	97	49	24
78	140	94	47	23	79	144	96	48	24	80	148	99	49	25
79	142	95	47	24	80	146	97	49	24	81	150	100	50	25
80	144	96	48	24	81	148	98	49	25	82	152	101	51	25

78					79					80				
76	142	95	47	24	77	146	97	49	24	78	150	100	50	25
77	144	96	48	24	78	148	99	49	25	79	152	101	51	25
78	146	97	49	24	79	150	100	50	25	80	154	102	51	26
79	148	99	49	25	80	152	101	51	25	81	156	104	52	26
80	150	100	50	25	81	154	102	51	26	82	157	105	52	26
81	152	101	51	25	82	155	104	52	26	83	159	106	53	27
82	154	102	51	26	83	157	105	52	26	84	161	108	54	27
83	155	104	52	26	84	159	106	53	27	85	163	109	54	27

81					82					83				
79	154	102	51	26	80	157	105	52	26	81	161	108	54	27
80	156	104	52	26	81	159	106	53	27	82	163	109	54	27
81	157	105	52	26	82	161	108	54	27	83	165	110	55	28
82	159	106	53	27	83	163	109	54	27	84	167	112	56	28
83	161	108	54	27	84	165	110	55	28	85	169	113	56	28
84	163	109	54	27	85	167	112	56	28	86	171	114	57	29
85	165	110	55	28	86	169	113	56	28	87	173	116	58	29
86	167	111	56	28	87	171	114	57	29	88	175	117	58	29

84					85					86				
82	165	110	55	28	83	169	113	56	28	84	173	116	58	29
83	167	112	56	28	84	171	114	57	29	85	175	117	58	29
84	169	113	56	28	85	173	116	58	29	86	178	118	59	30
85	171	114	57	29	86	175	117	58	29	87	180	120	60	30
86	173	116	58	29	87	177	118	59	30	88	182	121	61	30
87	175	117	58	29	88	180	120	60	30	89	184	122	61	31
88	177	118	59	30	89	182	121	61	30	90	186	124	62	31
89	170	120	60	30	90	184	122	61	31	91	188	125	63	31

87					88					89					90				
85	118	059	29	f	86	121	061	30	f	87	124	062	31	f	88	127	063	32	f
86	120	60	30		87	122	61	31		88	125	63	31		89	128	64	32	
87	121	61	30		88	124	62	31		89	127	63	32		90	130	65	32	
88	122	61	31		89	125	63	31		90	128	64	32		91	131	66	33	
89	124	62	31		90	127	63	32		91	130	65	32		92	132	66	33	
90	125	63	31		91	128	64	32		92	131	66	33		93	134	67	33	
91	127	63	32		92	130	65	32		93	132	66	33		94	135	68	34	
92	128	64	32		93	131	65	33		94	134	67	33		95	137	68	34	

91					92					93					94				
89	130	065	32	f	90	132	066	33	f	91	135	068	34	f	92	138	069	35	f
90	131	66	33		91	134	67	33		92	137	68	34		93	140	70	35	
91	132	66	33		92	135	68	34		93	138	69	35		94	141	71	35	
92	134	67	33		93	137	68	34		94	140	70	35		95	143	71	36	
93	135	68	34		94	138	69	35		95	141	71	35		96	144	72	36	
94	137	68	34		95	140	70	35		96	143	71	36		97	146	73	36	
95	138	69	35		96	141	71	35		97	144	72	36		98	147	74	37	
96	140	70	35		97	143	71	36		98	146	73	36		99	149	74	37	

95					96					97					98					99				
93	71	035	f		94	72	036	f		95	74	037	f		96	75	038	f		97	77	038	f	
94	71	36			95	73	36			96	74	37			97	76	38			98	78	39		
95	72	36			96	74	37			97	76	38			98	77	38			99	78	39		
96	73	36			97	74	37			98	76	38			99	78	39			100	79	40		
96	74	37			98	76	38			99	77	38			100	78	39			101	80	40		
98	74	37			99	76	38			100	78	39			101	79	40			102	81	40		
99	75	38			100	77	38			101	78	39			102	80	40			103	82	41		
100	76	38			101	77	39			102	79	40			103	80	40			104	82	41		

A Table shewing the Price of any Number of Letters, from 16,000 to 100,000, at 5½d. 5¾d. 6d. 6¼d. 6½d. 7d. 7¼d. and 8d. per Thousand.

Th	5¼d.	5½d.	5¾d.	6d.	6¼d.	7d.	7½d.	8d.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
17	7 5½	7 9½	8 1½	8 6	8 10½	9 11	10 7½	11 4
18	7 10½	8 3	8 7½	9 0	9 4½	10 6	11 8	12 0
19	8 3½	8 8½	9 1½	9 6	9 10½	11 1	11 10½	12 8
20	8 9	8 2	9 7	10 0	10 5	11 8	12 6	13 4
21	9 2½	9 7½	10 0½	10 6	10 11½	12 3	13 1½	14 0
22	9 7½	10 1	10 6½	11 0	11 5½	12 10	13 9	14 8
23	10 0½	10 6½	10 0½	11 6	11 11½	13 5	14 4½	15 4
24	10 6	11 0	11 6	12 0	12 6	14 0	15 0	16 0
25	10 11½	11 5½	11 11½	12 6	13 0½	14 7	15 7½	16 8
26	11 4½	11 11	12 5½	13 0	13 6½	15 2	16 3	17 4
27	11 9½	12 4½	12 11½	13 6	14 0½	15 9	16 10½	18 0
28	12 3	12 10	13 5	14 0	14 7	16 4	17 6	18 8
29	12 8½	13 3½	13 10½	14 6	15 1½	16 11	18 1½	19 4
30	13 1½	13 9	14 4½	15 0	15 7½	17 6	18 9	20 0
31	13 6½	14 2½	14 10½	15 6	16 1½	18 1	19 4½	20 8
32	14 0	14 8	15 4	16 0	16 8	18 8	20 0	21 4
33	14 5½	15 1½	15 9½	16 6	17 2½	19 3	20 7½	22 0
34	14 10½	15 7	16 3½	17 0	17 8½	19 10	21 3	22 8
35	15 3½	16 0½	16 9½	17 6	18 2½	20 5	21 10½	23 4
36	15 9	16 6	17 3	18 0	18 9	21 0	22 6	24 0
37	16 2½	16 11½	17 8½	18 6	19 3½	21 7	23 1½	24 8
38	16 7½	17 5	18 2½	19 0	19 9½	22 2	23 9	25 4
39	17 0½	17 10½	18 8½	19 6	20 3½	22 9	24 4½	26 0
40	17 6	18 4	19 2	20 0	20 10	23 4	25 0	26 8
41	17 11½	18 9½	19 7½	20 6	21 4½	23 11	25 7½	27 4
42	18 4½	19 3	20 1½	21 0	21 10½	24 6	26 3	28 0
43	18 9½	19 8½	20 7½	21 6	22 4½	25 1	26 10½	28 8
44	19 3	20 2	21 1	22 0	22 11	25 8	27 6	29 4
45	19 8½	20 7½	21 6½	22 6	23 5½	26 3	28 1½	30 0
46	20 1½	21 1	22 0½	23 0	23 11½	26 10	28 9	30 8
47	20 6½	21 6½	22 6½	23 6	24 5½	27 5	29 4½	31 4
48	21 0	22 0	23 0	24 0	25 0	28 0	30 0	32 0
49	21 5½	22 5½	23 5½	24 6	25 6½	28 7	30 7½	32 8
50	21 10½	22 11	23 11½	25 0	26 0½	29 2	31 3	33 4
51	22 3½	23 4½	24 5½	25 6	26 6½	29 9	31 10½	34 0
52	22 9	23 10	24 11	26 0	27 1	30 4	32 6	34 8
53	23 2½	24 3½	26 4½	26 6	27 7½	30 11	33 1½	35 4
54	23 7½	24 9	25 10½	27 0	28 1½	31 6	33 9	36 0
55	24 0½	25 2½	26 4½	27 6	28 7½	32 1	34 4½	36 8

Th.	5¼d.		5½d.		5¾d.		6d.		6½d.		7d.		7½d.		8d.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
56	24	6	25	8	26	10	28	0	29	2	32	8	36	0	37	4
57	24	11¼	26	1¼	27	3¾	28	6	29	8¼	33	3	35	7¼	38	0
58	25	4½	26	7	27	9½	29	0	30	2½	33	10	36	3	38	8
59	25	9¾	27	0¼	28	3¼	29	6	30	8¾	34	5	36	10½	39	4
60	26	3	27	6	28	9	30	0	31	3	35	0	37	6	40	0
61	26	8¼	27	11¼	29	2¼	30	6	31	9½	35	7	38	1¼	40	8
62	27	1¼	28	5	29	8¼	31	0	32	3½	36	2	38	9	41	4
63	27	6¾	28	10½	30	2¾	31	6	32	9¾	36	9	39	4½	42	0
64	28	0	29	4	30	8	32	0	33	4	37	4	40	0	42	8
65	28	5¼	29	9¼	31	1¾	32	6	33	10¼	37	11	40	7½	43	4
66	28	10½	30	3	31	7¾	33	0	34	4¼	38	6	41	3	44	0
67	29	3¾	30	8¼	32	1¾	33	6	34	10¾	39	1	41	10½	44	8
68	29	9	31	2	32	7	34	0	35	5	39	8	42	6	45	4
69	30	2¼	31	7¼	33	0¾	34	6	35	11¼	40	3	43	1¼	46	0
70	30	7¼	32	1	33	6¾	35	0	36	5¼	40	10	43	9	46	8
71	31	0¾	32	6¼	34	0¼	35	6	36	11¾	41	5	44	4½	47	4
72	31	6	33	0	34	6	36	0	37	6	42	0	45	0	48	0
73	31	11¼	33	5¾	34	11¾	36	6	38	0¼	42	7	45	7½	48	8
74	32	4¼	33	11	35	5¼	37	0	38	6¼	43	2	46	3	49	4
75	32	9¾	34	4¼	35	11¼	37	6	39	0¾	43	9	46	10½	50	0
76	33	3	34	10	36	5	38	0	39	7	44	4	47	6	50	8
77	33	8¼	35	3¼	36	10¾	38	6	40	1¼	44	11	48	1½	51	4
78	34	1¼	35	9	37	4¼	39	0	40	7½	45	6	48	9	52	0
79	34	6¾	36	2¼	37	10¾	39	6	41	1¾	46	1	49	4½	52	8
80	35	0	36	8	38	4	40	0	41	8	46	8	50	0	53	4
81	35	5¼	37	1¾	38	9¾	40	6	42	2¼	47	3	50	7½	54	0
82	35	10¼	37	7	39	3¼	41	0	42	8¼	47	10	51	3	54	8
83	36	3¾	38	0¼	39	9¼	41	6	43	2¾	48	5	51	10½	55	4
84	36	9	38	6	40	3	42	0	43	9	49	0	52	6	56	0
85	37	2¼	38	11¼	40	8¼	42	6	44	3¼	49	7	53	1½	56	8
86	37	7½	39	5	41	2¼	43	0	44	9½	50	2	53	9	57	4
87	38	0¾	39	10¼	41	8¼	43	6	45	3¾	50	9	54	4½	58	0
88	38	6	40	4	42	2	44	0	45	10	51	4	55	0	58	8
89	38	11¼	40	9¼	42	7¾	44	6	46	4¼	51	11	55	7½	59	4
90	39	4¼	41	3	43	1¾	45	0	46	10¼	52	6	56	3	60	0
91	39	9¾	41	8¼	43	7¾	45	6	47	4¾	53	1	56	10½	60	8
92	40	3	42	2	44	1	46	0	47	11	53	8	57	6	61	4
93	40	8¼	42	7¼	44	6¾	46	6	48	5¼	54	3	58	1½	62	0
94	41	1¼	43	1	45	0¾	47	0	48	11¼	54	10	58	9	62	8
95	41	6¾	43	6¼	45	6¼	47	6	49	5¾	55	5	59	4½	63	4
96	42	0	44	0	46	0	48	0	50	0	56	0	60	0	64	0
97	42	5¼	44	5¼	46	5¾	48	6	50	6¼	56	7	60	7½	64	8
98	42	10¼	44	11	46	11¼	49	0	51	0¾	56	2	61	3	65	4
99	43	3¾	45	4¼	47	5¼	49	6	51	6¾	57	9	61	10½	66	0
100	43	9	45	10	47	11	50	0	52	1	58	4	62	6	66	8

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1	5¼	5¾	6	6¾	6¾	7½	7½	8	8¼
2	10½	11½	1 0	1 0¾	1 1½	1 2¼	1 3	1 3¾	1 4½
3	1 3¾	1 5	1 6	1 7¼	1 8¾	1 9¾	1 10½	1 11¼	2 0¾
4	1 9	1 10½	2 0	2 1½	2 3	2 4½	2 6	2 7½	2 9
5	2 2½	2 4½	2 6	2 8¾	2 9¾	2 11½	3 1½	3 3¼	3 5¼
6	2 7½	2 9¾	3 0	3 2¼	3 4½	3 6¾	3 9	3 11¼	4 1½
7	3 0½	3 3¼	3 6	3 8¾	3 11¼	4 2	4 4½	4 7¼	4 9¾
8	3 6	3 9	4 0	4 3	4 6	4 9	5 0	5 3	5 6
9	3 11¼	4 2¼	4 6	4 9½	5 0¾	5 3¾	5 7½	5 11	6 2¼
10	4 4½	4 8¼	5 0	5 3¾	5 7½	5 11½	6 3	6 6¾	6 10½
11	4 9¾	5 2	5 6	5 10½	6 2¼	6 6½	6 10½	7 2½	7 6¾
12	5 3	5 7½	6 0	6 4½	6 9	7 1½	7 6	7 10½	8 3
13	5 8¼	6 1½	6 6	6 11	7 3¾	7 8¾	8 1½	8 6¼	8 11¼
14	6 1½	6 6¾	7 0	7 5½	7 10½	8 3½	8 9	9 2½	9 7½
15	6 6¾	7 0¼	7 6	7 11½	8 5½	8 11	9 4½	9 10½	10 3½
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2	1 5¼	1 6	1 6¾	1 7½	1 8¾	1 9	1 9¾	1 10½
3	2 2	2 3	2 4½	2 5¼	2 6¾	2 7½	2 8¾	2 9¾
4	2 10¾	3 0	3 1½	3 3	3 4½	3 6	3 7½	3 9
5	3 7½	3 9	3 11	4 0½	4 2¾	4 4½	4 6½	4 8¼
6	4 8¼	4 6	4 8½	4 10½	5 0¾	5 3	5 5½	5 7½
7	5 0½	5 3	5 5½	5 8½	5 11	6 1½	6 4½	6 6¾
8	5 9	6 0	6 3	6 6	6 9	7 0	7 3	7 6
9	6 5½	6 9	7 0½	7 3½	7 7½	7 10½	8 2	8 5½
10	7 2½	7 6	7 9½	8 1½	8 5½	8 9	9 0½	9 4½
11	7 11	8 3	8 7½	8 11½	9 3½	9 7½	9 11½	10 3½
12	8 7½	9 0	9 4½	9 9	10 1½	10 6	10 10½	11 3
13	9 4½	9 9	10 2	10 6½	10 11½	11 4½	11 9½	12 2½
14	10 0½	10 6	10 11½	11 4½	11 9¾	12 3	12 8½	13 1½
15	10 9½	11 3	11 8½	12 2½	12 8	13 1½	13 7½	14 0½
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2	1 11½	2 0	2 0½	2 1½	2 2½	2 3	2 3½	2 4½
3	2 11	3 0	3 1½	3 2½	3 3½	3 4½	3 5½	3 6½
4	3 10½	4 0	4 1½	4 3	4 4½	4 6	4 7½	4 9
5	4 10½	5 0	5 2	5 3½	5 5½	5 7½	5 9½	5 11½
6	5 9½	6 0	6 2½	6 4½	6 6½	6 9	6 11½	7 1½
7	6 9½	7 0	7 2½	7 5½	7 8	7 10½	8 1½	8 3½
8	7 9	8 0	8 3	8 6	8 9	9 0	9 3	9 6
9	8 8½	9 0	9 3½	9 6½	9 10½	10 1½	10 5	10 8½
10	9 8½	10 0	10 3½	10 7½	10 11½	11 3	11 6½	11 10½
11	10 8	11 0	11 4½	11 8½	12 0½	12 4½	12 8½	13 0½
12	11 7½	12 0	12 4½	12 9	13 1½	13 6	13 10½	14 3
13	12 7½	13 0	13 5	13 9½	14 2½	14 7½	15 0½	15 5½
14	13 6½	14 0	14 5½	14 10½	15 3½	15 9	16 2½	16 7½
15	14 6½	15 0	15 5½	15 11½	16 5	16 10½	17 4½	17 9½
16	15 6	16 0	16 6	17 0	17 6	18 0	18 6	19 0

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1	1 2½	1 3	1 3½	1 3½	1 4½	1 4½	1 5	1 5½
2	2 5½	2 6	2 6½	2 7½	2 8½	2 9	2 9½	2 10½
3	3 8	3 9	3 10½	3 11½	4 0½	4 1½	4 2½	4 3½
4	4 10½	5 0	5 1½	5 3	5 4½	5 6	5 7½	5 9
5	5 1½	6 3	6 5	6 6½	6 8½	6 10½	7 0½	7 2½
6	7 3½	7 6	7 8½	7 10½	8 0½	8 3	8 5½	8 7½
7	8 6½	8 9	8 11½	9 2½	9 5	9 7½	9 10½	10 0½
8	9 9	10 0	10 3	10 6	10 9	11 0	11 3	11 6
9	10 11½	11 3	11 6½	11 9½	12 1½	12 4½	12 8	12 11½
10	12 2½	12 6	12 9½	13 1½	13 5½	13 9	14 0½	14 4½
11	13 5	13 9	14 1½	14 5½	14 9½	15 1½	15 5½	15 9½
12	14 7½	15 0	15 4½	15 9	16 1½	16 6	16 10½	17 3
13	15 10½	16 3	16 8	17 0½	17 5½	17 10½	18 3½	18 8½
14	17 0½	17 6	17 11½	18 4½	18 9½	19 3	19 8½	20 1½
15	18 3½	18 9	19 2½	19 8½	20 2	20 7½	21 1½	21 6½
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2	2 11½	3 0	3 0½	3 1½	3 2½	3 3	3 3½	3 4½
3	4 5	4 6	4 7½	4 8½	4 9½	4 10½	4 11½	5 0½
4	5 10½	6 0	6 1½	6 3	6 4½	6 6	6 7½	6 9
5	7 4½	7 6	7 8	7 9½	7 11½	8 1½	8 3½	8 5½
6	8 9½	9 0	9 2½	9 4½	9 6½	9 9	9 11½	10 1½
7	10 3½	10 6	10 8½	10 11½	11 2½	11 4½	11 7½	11 9½
8	11 9	12 0	12 3	12 6	12 9	13 0	13 3	13 6
9	13 2½	13 6	13 9½	14 0½	14 4½	14 7½	14 11	15 2½
10	14 8½	15 0	15 3½	15 7½	15 11½	16 3	16 6½	16 10½
11	16 2	16 6	16 10½	17 2½	17 6½	17 10½	18 2½	18 6½
12	17 7½	18 0	18 4½	18 9	19 1½	19 6	19 10½	20 3
13	19 1½	19 6	19 11	20 3½	20 8½	21 1½	21 6½	21 11½
14	20 6½	21 0	21 5½	21 10½	22 3½	22 9	23 2½	23 7½
15	22 0½	22 6	22 11½	23 5½	23 11	24 4½	24 10½	25 3½
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2	3 5½	3 6	3 6½	3 7½	3 8½	3 9	3 9½	3 10½
3	5 2	5 3	5 4½	5 5½	5 6½	5 7½	5 8½	5 9½
4	6 10½	7 0	7 1½	7 3	7 4½	7 6	7 7½	7 9
5	8 7½	8 9	8 11	9 0½	9 2½	9 4½	9 6½	9 8½
6	10 3½	10 6	10 8½	10 10½	11 0½	11 3	11 5½	11 7½
7	12 0½	12 3	12 5½	12 8½	12 11	13 1½	13 4½	13 6½
8	13 9	14 0	14 3	14 6	14 9	15 0	15 3	15 6
9	15 5½	15 9	16 0½	16 3½	16 7½	16 10½	17 2	17 5½
10	17 2½	17 6	17 9½	18 1½	18 5½	18 9	19 0½	19 4½
11	18 11	19 3	19 7½	19 11½	20 3½	20 7½	20 11½	21 3½
12	20 7½	21 0	21 4½	21 9	22 1½	22 6	22 10½	23 3
13	22 4½	22 9	23 2	23 6½	23 11½	24 4½	24 9½	25 2½
14	24 0½	24 6	24 11½	25 4½	25 9½	26 3	26 8½	27 1½
15	25 9½	26 3	27 3	27 2½	27 8	28 1½	28 7½	29 0½
16	27 6	28 0	28 6	29 0	29 6	30 0	30 6	31 0

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	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	1	11½	2	0	2	0½	2	0½	2	1½	2	1½	2	2	2	2½
2	3	11½	4	0	4	0½	4	1½	4	2½	4	3	4	3½	4	4½
3	5	11	6	0	6	1½	6	2½	6	3½	6	4½	6	5½	6	6½
4	7	10½	8	0	8	1½	8	3	8	4½	8	6	8	7½	8	9
5	9	10½	10	0	10	2	10	3½	10	5½	10	7½	10	9½	10	11½
6	11	9½	12	0	12	2½	12	4½	12	6½	12	9	12	11½	13	1½
7	13	9½	14	0	14	2½	14	5½	14	8	14	10½	15	1½	15	3½
8	15	9	16	0	16	3	16	6	16	9	17	0	17	3	17	6
9	17	8½	18	0	18	3½	18	6½	18	10½	19	1½	19	5	19	8½
10	19	8½	20	0	20	3½	20	7½	20	11½	21	3	21	6½	21	10½
11	21	8	22	0	22	4½	22	8½	23	0½	23	4½	23	8½	24	0½
12	23	7½	24	0	24	4½	24	9	25	1½	25	6	25	10½	26	3
13	25	7½	26	0	26	5	26	9½	27	2½	27	7½	28	0½	28	5½
14	27	6½	28	0	28	5½	28	10½	29	3½	29	9	30	2½	30	7½
15	29	6½	30	0	30	5½	30	11½	31	5	31	10½	32	4½	32	9½
16	31	6	32	0	32	6	33	0	33	6	34	0	34	6	35	0

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	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	2	2½	2	3	2	3½	2	3½	2	4½	2	5½	2	5	2	5½
2	4	5½	4	6	4	6½	4	7½	4	8½	4	9	4	9½	4	10½
3	6	8	6	9	6	10½	6	11½	7	0½	7	1½	7	2½	7	3½
4	8	10½	9	0	9	1½	9	3	9	4½	9	9	9	7½	9	9
5	11	1½	11	3	11	5	11	6½	11	8½	11	10½	12	0½	12	2½
6	13	3½	13	6	13	8½	13	10½	14	0½	14	3	14	5½	14	7½
7	15	6½	15	9	15	11½	16	2½	16	5	16	7½	16	10½	17	0½
8	17	9	18	0	18	3	18	6	18	9	19	0	19	3	19	6
9	19	11½	20	3	20	6½	20	9½	21	1½	21	4½	21	8	21	11½
10	22	2½	22	6	22	9½	23	1½	23	5½	23	9	24	0½	24	4½
11	24	5	24	9	25	1½	25	5½	25	9½	26	1½	26	5½	26	9½
12	26	7½	27	0	27	4½	27	9	28	1½	28	6	28	10½	29	3
13	28	10½	29	3	29	8	30	0½	30	5½	30	10½	31	3½	31	8½
14	31	0½	31	6	31	11½	32	4½	32	9½	33	3	33	8½	34	1½
15	33	3½	33	9	34	2½	34	8½	35	2	35	7½	36	1½	36	6½
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2	4 11½	5 0	5 0½	5 1½	5 2½	5 3	5 3½	5 4½
3	7 5½	7 6	7 7½	7 8½	7 9½	7 10½	7 11½	8 0½
4	9 10½	10 0	10 1½	10 3	10 4½	10 6	10 7½	10 9
5	12 4½	12 6	12 8	12 9½	12 11½	13 1½	13 3½	13 4½
6	14 9½	15 0	15 2½	15 4½	15 6½	15 9	15 11½	16 1½
7	17 3½	17 6	17 8½	17 11½	18 2	18 4½	18 7½	18 9½
8	19 9	20 0	20 3	20 6	20 9	21 0	21 3	21 6
9	22 2½	22 6	22 9½	23 0½	23 4½	23 7½	23 11	24 2½
10	24 8½	25 0	25 3½	25 7½	25 11½	26 3	26 6½	26 10½
11	27 2	27 6	27 10½	28 2½	28 6½	28 10½	29 2½	29 5½
12	29 7½	30 0	30 4½	30 9	31 1½	31 6	31 10½	32 3
13	32 1½	32 6	32 11	33 3½	33 8½	34 1½	34 6½	34 11½
14	34 6½	35 0	35 5½	35 10½	36 3½	36 9	37 2½	37 7½
15	37 0½	37 6	37 11½	38 5½	38 11	39 4½	39 10½	40 3½
16	39 6	40 0	40 6	41 0	41 6	42 0	42 6	43 0

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	s d	s d	s d	s d	s d	s d	s d	s d
1	2 8½	2 9	2 9½	2 9½	2 10½	2 10½	2 10½	2 11½
2	5 5½	5 6	5 6½	5 7½	5 8½	5 9	5 9½	5 10½
3	8 1½	8 3	8 4½	8 5½	8 6½	8 7½	8 8½	8 9½
4	10 10½	11 0	11 1½	11 3	11 4½	11 6	11 7½	11 9
5	13 7	13 9	13 11	14 0½	14 2½	14 4½	14 6½	14 8½
6	16 3½	16 6	16 8½	16 10½	17 0½	17 3	17 5½	17 7½
7	19 0½	19 3	19 5½	19 8½	19 10½	20 1½	20 4½	20 6½
8	21 9	22 0	22 3	22 6	22 9	23 0	23 3	23 6
9	24 5½	24 9	25 0½	25 3½	25 7	25 10½	26 2	26 5½
10	27 2½	27 6	27 9½	28 1½	28 5	28 9	29 0½	29 4½
11	29 10½	30 3	30 7½	30 11½	31 3½	31 7½	31 11½	32 3½
12	32 7½	33 0	33 4½	33 9	34 1½	34 6	34 10½	35 3
13	35 4	35 9	36 2	36 6½	36 11½	37 4½	37 9½	38 2½
14	38 0½	38 6	38 11½	39 4½	39 9½	40 3	40 8½	41 1½
15	40 9½	41 3	41 8½	42 2½	42 7½	43 1½	43 7½	44 0½
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1	0 4	0 4½	0 4½	0 4½	0 5	0 5½	0 5½	0 5½	0 6
2	0 8	0 8½	0 9	0 9½	0 10	0 10½	0 11	0 11½	1 0
3	1 0	1 0½	1 1½	1 2½	1 3	1 3½	1 4½	1 5½	1 6
4	1 4	1 5	1 6	1 7	1 8	1 9	1 10	1 11	2 0
5	1 8	1 9½	1 10½	1 11½	2 1	2 2½	2 3½	2 4½	2 6
6	2 0	2 1½	2 3	2 4½	2 6	2 7½	2 9	2 10½	3 0
7	2 4	2 5½	2 7½	2 9½	2 11	3 0½	3 2½	3 4½	3 6
8	2 8	2 10	3 0	3 2	3 4	3 6	3 8	3 10	4 0
9	3 0	3 2½	3 4½	3 6½	3 9	3 11½	4 1½	4 3½	4 6
10	3 4	3 6½	3 9	3 11½	4 2	4 4½	4 7	4 9½	5 0
11	3 8	3 10½	4 1½	4 4½	4 7	4 9½	5 0½	5 3½	5 6
12	4 0	4 3	4 6	4 9	5 0	5 3	5 6	5 9	6 0
13	4 4	4 7½	4 10½	5 1½	5 5	5 8½	5 11½	6 2½	6 6
14	4 8	4 11½	5 3	5 6½	5 10	6 1½	6 5	6 8½	7 0
15	5 0	5 3½	5 7½	5 11½	6 3	6 6½	6 10½	7 2½	7 6
16	5 4	5 8	6 0	6 4	6 8	7 0	7 4	7 8	8 0
17	5 8	6 0½	6 4½	6 8½	7 1	7 5½	7 9½	8 1½	8 6
18	6 0	6 4½	6 9	7 1½	7 6	7 10½	8 3	8 7½	9 0
19	6 4	6 8½	7 1½	7 6½	7 11	8 3½	8 8½	9 1½	9 6
20	6 8	7 1	7 6	7 11	8 4	8 9	9 2	9 7	10 0
21	7 0	7 5½	7 10½	8 3½	8 9	9 2½	9 7½	10 0½	10 6
22	7 4	7 9½	8 3	8 8½	9 2	9 7½	10 1	10 6½	11 0
23	7 8	8 1½	8 7½	9 1½	9 7	10 0½	10 6½	11 0½	11 6
24	8 0	8 6	9 0	9 6	10 0	10 6	11 0	11 6	12 0

Pa	12s6d	13s.	13s6d	14s.	14s6d	15s.	15s6d	16s.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	0 6½	0 6½	0 6½	0 7	0 7½	0 7½	0 7½	0 8
2	1 0½	1 1	1 1½	1 2	1 2½	1 3	1 3½	1 4
3	1 6½	1 7½	1 8½	1 9	1 9½	1 10½	1 11½	2 0
4	2 1	2 2	2 3	2 4	2 5	2 6	2 7	2 8
5	2 7½	2 8½	2 9½	2 11	3 0½	3 1½	3 2½	3 4
6	3 1½	3 3	3 4½	3 6	3 7½	3 9	3 10½	4 0
7	3 7½	3 9½	3 11½	4 1	4 2½	4 4½	4 6½	4 8
8	4 2	4 4	4 6	4 8	4 10	5 0	5 2	5 4
9	4 8½	4 10½	5 0½	5 3	5 5½	5 7½	5 9½	6 0
10	5 2½	5 5	5 7½	5 10	6 0½	6 3	6 5½	6 8
11	5 8½	5 11½	6 2½	6 5	6 7½	6 10½	7 1½	7 4
12	6 3	6 6	6 9	7 0	7 3	7 6	7 9	8 0

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Qrs.	12s6d	13s.	13s6d	14s.	14s6d	15s.	15s6d	16s.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
13	6 9½	7 0½	7 3½	7 7	7 10½	8 1½	8 4½	8 8
14	7 3½	7 7	7 10½	8 2	8 5½	8 9	9 0½	9 4
15	7 9½	8 1½	8 5½	8 9	9 0½	9 4½	9 8½	10 0
16	8 4	8 8	9 0	9 4	9 8	10 0	10 4	10 8
17	8 10½	9 2½	9 6½	9 11	10 3½	10 7½	10 11½	11 4
18	9 4½	9 9	10 1½	10 6	10 10½	11 3	11 7½	12 0
19	9 10½	10 3½	10 8½	11 1	11 5½	11 10½	12 3½	12 8
20	10 5	10 10	11 3	11 8	12 1	12 6	12 11	13 4
21	10 11½	11 4½	11 9½	12 3	12 8½	13 1½	13 6½	14 0
22	11 5½	11 11	12 4½	12 10	13 3½	13 9	14 2½	14 8
23	11 11½	12 5½	12 11½	13 5	13 10½	14 4½	14 10½	15 4
24	12 6	13 0	13 6	14 0	14 6	15 0	15 6	16 0

Qrs.	16s6d	17s.	17s6d	18s.	18s6d	19s.	19s6d	20s.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	0 8½	0 8½	0 8½	0 9	0 9½	0 9½	0 9½	0 10
2	1 4½	1 5	1 5½	1 6	1 6½	1 7	1 7½	1 8
3	2 0½	2 1½	2 2½	2 3	2 3½	2 4½	2 5½	2 6
4	2 9	2 10	2 11	3 0	3 1	3 2	3 3	3 4
5	3 5½	3 6½	3 7½	3 9	3 10½	3 11½	4 0½	4 2
6	4 1½	4 3	4 4½	4 6	4 7½	4 9	4 10½	5 0
7	4 9½	4 11½	5 1½	5 3	5 4½	5 6½	5 8½	5 10
8	5 6	5 8	5 10	6 0	6 2	6 4	6 6	6 8
9	6 2½	6 4½	6 6½	6 9	6 11½	7 1½	7 3½	7 6
10	6 10½	7 1	7 3½	7 6	7 8½	7 11	8 1½	8 4
11	7 6½	7 9½	8 0½	8 3	8 5½	8 8½	8 11½	9 2
12	8 3	8 6	8 9	9 0	9 3	9 6	9 9	10 0
13	8 11½	9 2½	9 5½	9 9	10 0½	10 3½	10 6½	10 10
14	9 7½	9 11	10 2½	10 6	10 9½	11 1	11 4½	11 8
15	10 3½	10 7½	10 11½	11 3	11 6½	11 10½	12 2½	12 6
16	11 0	11 4	11 8	12 0	12 4	12 8	13 0	13 4
17	11 8½	12 0½	12 4½	12 9	13 1½	13 5½	13 9½	14 2
18	12 4½	12 9	13 1½	13 6	13 10½	14 3	14 7½	15 0
19	13 0½	13 5½	13 10½	14 3	14 7½	15 0½	15 5½	15 10
20	13 9	14 2	14 7	15 0	15 5	15 10	16 3	16 8
21	14 5½	14 10½	15 3½	15 9	16 2½	16 7½	17 0½	17 6
22	15 1½	15 7	16 0½	16 6	16 11½	17 5	17 10½	18 4
23	15 9½	16 3½	16 9½	17 3	17 8½	18 2½	18 8½	19 2
24	16 6	17 0	17 6	18 0	18 6	19 0	19 6	20 0

TWELVES.

Pa	20s6d	21s.	21s6d	22s.	22s6d	23s.	23s6d	24s.
	s d	s d	s d	s d	s d	s d	s d	s d
1	0 10½	0 10½	0 10½	0 11	0 11½	0 11½	0 11½	1 0
2	1 8½	1 9	1 9½	1 10	1 10½	1 11	1 11½	2 0
3	2 6½	2 7½	2 8½	2 9	2 9½	2 10½	2 11½	3 0
4	3 5	3 6	3 7	3 8	3 9	3 10	3 11	4 0
5	4 3½	4 4½	4 5½	4 7	4 8½	4 9½	4 10½	5 0
6	5 1½	5 3	5 4½	5 6	5 7½	5 9	5 10½	6 0
7	5 11½	6 1½	6 3½	6 5	6 6½	6 8½	6 10½	7 0
8	6 10	7 0	7 2	7 4	7 6	7 8	7 10	8 0
9	7 8½	7 10½	8 0½	8 3	8 5½	8 7½	8 9½	9 0
10	8 6½	8 9	8 11½	9 2	9 4½	9 7	9 9½	10 0
11	9 4½	9 7½	9 10½	10 1	10 3½	10 6½	10 9½	11 0
12	10 3	10 6	10 9	11 0	11 3	11 6	11 9	12 0
13	11 1½	11 4½	11 7½	11 11	12 2½	12 5½	12 8½	13 0
14	11 11½	12 3	12 6½	12 10	13 1½	13 5	13 8½	14 0
15	12 9½	13 1½	13 5½	13 9	14 0½	14 4½	14 8½	15 0
16	13 8	14 0	14 4	14 8	15 0	15 4	15 8	16 0
17	14 6½	14 10½	15 2½	15 7	15 11½	16 3½	16 7½	17 0
18	15 4½	15 9	16 1½	16 6	16 10½	17 3	17 7½	18 0
19	16 2½	16 7½	17 0½	17 5	17 9½	18 2½	18 7½	19 0
20	17 1	17 6	17 11	18 4	18 9	19 2	19 7	20 0
21	17 11½	18 4½	18 9½	19 3	19 8½	20 1½	20 6½	21 0
22	18 9½	19 3	19 8½	20 2	20 7½	21 1	21 6½	22 0
23	19 7½	20 1½	20 7½	21 1	21 6½	22 0½	22 6½	23 0
24	20 6	21 0	21 6	22 0	22 6	23 0	23 6	24 0

Pa	24s6d	25s.	25s6d	26s.	26s6d	27s.	27s6d	28s.
	s d	s d	s d	s d	s d	s d	s d	s d
1	1 0½	1 0½	1 0½	1 1	1 1½	1 1½	1 1½	1 2
2	2 0½	2 1	2 1½	2 2	2 2½	2 3	2 3½	2 4
3	3 0½	3 1½	3 2½	3 3	3 3½	3 4½	3 5½	3 6
4	4 1	4 2	4 3	4 4	4 5	4 6	4 7	4 8
5	5 1½	5 2½	5 3½	5 5	5 6½	5 7½	5 8½	5 10
6	6 1½	6 3	6 4½	6 6	6 7½	6 9	6 10½	7 0
7	7 1½	7 3½	7 5½	7 7	7 8½	7 10½	8 0½	8 2
8	8 2	8 4	8 6	8 8	8 10	9 0	9 2	9 4
9	9 2½	9 4½	9 6½	9 9	9 11½	10 1½	10 3½	10 6
10	10 2½	10 5	10 7½	10 10	11 0½	11 3	11 5½	11 8
11	11 2½	11 5½	11 8½	11 11	12 1½	12 4½	12 7½	12 10
12	12 3	12 6	12 9	13 0	13 3	13 6	13 9	14 0

TWELVES.

Pa.	24s6d		25s.		25s6d		26s.		26s6d		27s.		27s6d		28s.	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
13	13	3½	13	6½	13	9½	14	1	14	4½	14	7½	14	10½	15	2
14	14	3½	14	7	14	10½	15	2	15	5½	15	8	16	0½	16	4
15	15	3½	15	7½	15	11½	16	3	16	6½	16	10½	17	2½	17	6
16	16	4	16	8	17	0	17	4	17	8	18	0	18	4	18	8
17	17	4½	17	8½	18	0½	18	5	18	9½	19	1½	19	5½	19	10
18	18	4½	18	9	19	1½	19	6	19	10½	20	3	20	7½	21	0
19	19	4½	19	9½	20	2½	20	7	20	11½	21	4½	21	9½	22	2
20	20	5	20	10	21	3	21	8	22	1	22	6	22	11	23	4
21	21	5½	21	10½	22	3½	22	9	23	2½	23	7½	24	0½	24	6
22	22	5½	22	11	23	4½	23	10	24	3½	24	9	25	2½	25	8
23	23	5½	23	11½	24	5½	24	11	25	4½	25	10½	26	4½	26	10
24	24	6	25	0	25	6	26	0	26	6	27	0	27	6	28	0

Pa.	28s6d		29s.		29s6d		30s.		30s6d		31s.		31s6d		32s.	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	1	2½	1	2½	1	2½	1	3	1	3½	1	3½	1	3½	1	4
2	2	4½	2	5	2	5½	2	6	2	6½	2	7	2	7½	2	8
3	3	6½	3	7½	3	8½	3	9	3	9½	3	10½	3	11½	4	0
4	4	9	4	10	4	11	5	0	5	1	5	2	5	3	5	4
5	5	11½	6	0½	6	1½	6	3	6	4½	6	5½	6	6½	6	8
6	7	1½	7	3	7	4½	7	6	7	7½	7	9	7	10½	8	0
7	8	3½	8	5½	8	7½	8	9	8	10½	9	0½	9	2½	9	4
8	9	6	9	8	9	10	10	0	10	2	10	4	10	6	10	8
9	10	8½	10	10½	11	0½	11	3	11	5½	11	7½	11	9½	12	0
10	11	10½	12	1	12	3½	12	6	12	8½	12	11	13	1½	13	4
11	13	0½	13	3½	13	6½	13	9	13	11½	14	2½	14	5½	14	8
12	14	3	14	6	14	9	15	0	15	3	15	6	15	9	16	0
13	15	5½	15	8½	15	11½	16	3	16	6½	16	9½	17	0½	17	4
14	16	7½	16	11	17	2½	17	6	17	9½	18	1	18	4½	18	8
15	17	9½	18	1½	18	5½	18	9	19	0½	19	4½	19	8½	20	0
16	19	0	19	4	19	8	20	0	20	4	20	8	21	0	21	4
17	20	2½	20	6½	20	10½	21	3	21	7½	21	11½	22	3½	22	8
18	21	4½	21	9	22	1½	22	6	22	10½	23	3	23	7½	24	0
19	22	6½	22	11½	23	4½	23	9	24	1½	24	6½	24	11½	25	4
20	23	9	24	2	24	7	25	0	25	5	25	10	26	3	26	8
21	24	11½	25	4½	25	9½	26	3	26	8½	27	1½	27	6½	28	0
22	26	1½	26	7	27	0½	27	6	27	11½	28	5	28	10½	29	4
23	27	3½	27	9½	28	3½	28	9	29	2½	29	8½	30	2½	30	8
24	28	6	29	0	29	6	30	0	30	6	31	0	31	6	32	0

TWELVES.

Ps	32s6d		33s.		33s6d		34s.		34s6d		35s.		35s6d		36s.	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	1	4½	1	4½	1	4½	1	5	1	5½	1	5½	1	5½	1	6
2	2	8½	2	9	2	9½	2	10	2	10½	2	11	2	11½	3	0
3	4	0½	4	1½	4	2½	4	3	4	3½	4	4½	4	5½	4	6
4	5	5	5	6	5	7	5	8	5	9	5	10	5	11	6	0
5	6	9½	6	10½	6	11½	7	1	7	2½	7	3½	7	4½	7	6
6	8	1½	8	3	8	4½	8	6	8	7½	8	9	8	10½	9	0
7	9	5½	9	7½	9	9½	9	11	10	0½	10	2½	10	4½	10	6
8	10	10	11	0	11	2	11	4	11	6	11	8	11	10	12	0
9	12	2½	12	4½	12	6½	12	9	12	11½	13	1½	13	3½	13	6
10	13	6½	13	9	13	11½	14	2	14	4½	14	7	14	9½	15	0
11	14	10½	15	1½	15	4½	15	7	15	9½	16	0½	16	3½	16	6
12	16	3	16	6	16	9	17	0	17	3	17	6	17	9	18	0
13	17	7½	17	10½	18	1½	18	5	18	8½	18	11½	19	2½	19	6
14	18	11½	19	3	19	6½	19	10	20	1½	20	5	20	8½	21	0
15	20	3½	20	7½	20	11½	21	3	21	6½	21	10½	22	2½	22	6
16	21	8	22	0	22	4	22	8	23	0	23	4	23	8	24	0
17	23	0½	23	4½	23	8½	24	1	24	5½	24	9½	25	1½	25	6
18	24	4½	24	9	25	1½	25	6	25	10½	26	3	26	7½	27	0
19	25	8½	26	1½	26	6½	26	11	27	3½	27	8½	28	1½	28	6
20	27	1	27	6	27	11	28	4	28	9	29	2	29	7	30	0
21	28	5½	28	10½	29	3½	29	9	30	2½	30	7½	31	0½	31	6
22	29	9½	30	3	30	8½	31	2	31	7½	32	1	32	6½	33	0
23	31	1½	31	7½	32	1½	32	7	33	0½	33	6½	34	0½	34	6
24	32	6	33	0	33	6	34	0	34	6	35	0	35	6	36	0

Ps	36s6d		37s.		37s6d		38s.		38s6d		39s.		39s6d		40s.	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	1	6½	1	6½	1	6½	1	7	1	7½	1	7½	1	7½	1	8
2	3	0½	3	1	3	1½	3	2	3	2½	3	3	3	3½	3	4
3	4	6½	4	7½	4	8½	4	9	4	9½	4	10½	4	11½	5	0
4	6	1	6	2	6	3	6	4	6	5	6	6	6	7	6	8
5	7	7½	7	8½	7	9½	7	11	8	0½	8	1½	8	2½	8	4
6	9	1½	9	3	9	4½	9	6	9	7½	9	9	9	10½	10	0
7	10	7½	10	9½	10	11½	11	1	11	2½	11	4½	11	6½	11	8
8	12	2	12	4	12	6	12	8	12	10	13	0	13	2	13	4
9	13	8½	13	10½	14	0½	14	3	14	5½	14	7½	14	9½	15	0
10	15	2½	15	5	15	7½	15	10	16	0½	16	3	16	5½	16	8
11	16	8½	16	11½	17	2½	17	5	17	7½	17	10½	18	1½	18	4
12	18	3	18	6	18	9	19	0	19	3	19	6	19	9	20	0

TWELVES.

Page	36s6d	37s.	37s6d	38s.	38s6d	39s.	39s6d	40s.
	s d	s d	s d	s d	s d	s d	s d	s d
13	19 9½	20 0½	20 3½	20 7	20 10½	21 1½	21 4½	21 8
14	21 3½	21 7	21 10½	22 2	22 5½	22 9	23 0½	23 4
15	22 9½	23 1½	23 5½	23 9	24 0½	24 4½	24 8½	25 0
16	24 4	24 8	25 0	25 4	25 8	26 0	26 4	26 8
17	25 10½	26 2½	26 6½	26 11	27 3½	27 7½	27 11½	28 4
18	27 4½	27 9	28 1½	28 6	28 10½	29 3	29 7½	30 0
19	28 10½	29 3½	29 8½	30 1	30 5½	30 10½	31 3½	31 8
20	30 5	30 10	31 3	31 8	32 1	32 6	32 11	33 4
21	31 11½	32 4½	32 9½	33 3	33 8½	34 1½	34 6½	35 0
22	33 5½	33 11	34 4½	34 10	35 3½	35 9	36 2½	36 8
23	34 11½	35 5½	35 11½	36 5	36 10½	37 4½	37 10½	38 4
24	36 6	37 0	37 6	38 0	38 6	39 0	39 6	40 0

Page	40s6d	41s.	41s6d	42s.	42s6d	43s.	43s6d	44s.
	s d	s d	s d	s d	s d	s d	s d	s d
1	1 8½	1 8½	1 8½	1 9	1 9½	1 9½	1 9½	1 10
2	3 4½	3 5	3 5½	3 6	3 6½	3 7	3 7½	3 8
3	5 0½	5 1½	5 2½	5 3	5 3½	5 4½	5 5½	5 6
4	6 9	6 10	6 11	7 0	7 1	7 2	7 3	7 4
5	8 5½	8 6½	8 7½	8 9	8 10½	8 11½	9 0½	9 2
6	10 1½	10 3	10 4½	10 6	10 7½	10 9	10 10½	11 0
7	11 9½	11 11½	12 1½	12 3	12 4½	12 6½	12 8½	12 10
8	13 6	13 8	13 10	14 0	14 2	14 4	14 6	14 8
9	15 2½	15 4½	15 6½	15 9	15 11½	16 1½	16 3	16 6
10	16 10½	17 1	17 3½	17 6	17 8½	17 11	18 1½	18 4
11	18 6½	18 9½	19 0½	19 3	19 5½	19 8½	19 11½	20 2
12	20 3	20 6	20 9	21 0	21 3	21 6	21 9	22 0
13	21 11½	22 2½	22 5½	22 9	23 0½	23 3½	23 6½	23 10
14	23 7½	23 11	24 2½	24 6	24 9½	25 1	25 4½	25 8
15	25 3½	25 7½	25 11½	26 3	26 6½	26 10½	27 2½	27 6
16	27 0	27 4	27 8	28 0	28 4	28 8	29 0	29 4
17	28 8½	29 0½	29 4½	29 9	30 1½	30 5½	30 9½	31 2
18	30 4½	30 9	31 1½	31 6	31 10½	32 3	32 7½	32 10
19	32 0½	32 5½	32 10½	33 3	33 7½	34 0½	34 5½	34 10
20	33 9	34 2	34 7	35 0	35 5	35 10	36 3	36 8
21	35 5½	35 10½	36 3½	36 9	37 2½	37 7½	38 0½	38 6
22	37 1½	37 7	38 0½	38 6	38 11½	39 5	39 10½	40 4
23	38 9½	39 3½	39 8½	40 3	40 8½	41 2½	41 8½	42 2
24	40 6	41 0	41 6	42 0	42 6	43 0	43 6	44 0

EIGHTEENS.

Sh.	10s.	10s6d	11s.	11s6d	12s.	12s6d	13s.	13s6d
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	0 3½	0 3¾	0 3¾	0 4	0 4	0 4¼	0 4½	0 4½
2	0 6½	0 7	0 7½	0 7¾	0 8	0 8½	0 8¾	0 9
3	0 10	0 10½	0 11	0 11¼	1 0	1 0½	1 1	1 1½
4	1 1½	1 2	1 2¾	1 3½	1 4	1 4¾	1 5½	1 6
5	1 4½	1 5½	1 6½	1 7½	1 8	1 9	1 9¾	1 10½
6	1 8	1 9	1 10	1 11	2 0	2 1	2 2	2 3
7	1 11½	2 0½	2 1½	2 3	2 4	2 5½	2 6½	2 7½
8	2 2½	2 4	2 5½	2 6¾	2 8	2 9½	2 10½	3 0
9	2 6	2 7½	2 9	2 10½	3 0	3 1½	3 3	3 4½
10	2 9½	2 11	3 0½	3 2½	3 4	3 5½	3 7½	3 9
11	3 0½	3 2½	3 4½	3 6½	3 8	3 10	3 11½	4 1½
12	3 4	3 6	3 8	3 10	4 0	4 2	4 4	4 6
13	3 7½	3 9½	3 11½	4 2	4 4	4 6½	4 8½	4 10½
14	3 10½	4 1	4 3½	4 5½	4 8	4 10½	5 0½	5 3
15	4 2	4 4½	4 7	4 9½	5 0	5 2½	5 5	5 7½
16	4 5½	4 8	4 10½	5 1½	5 4	5 6½	5 9½	6 0
17	4 8½	4 11½	5 2½	5 5½	5 8	5 11	6 1½	6 4½
18	5 0	5 3	5 6	5 9	6 0	6 3	6 6	6 9
19	5 3½	5 6½	5 9½	6 1	6 4	6 7½	6 10½	7 1½
20	5 6½	5 10	6 1½	6 4½	6 8	6 11½	7 2½	7 6
21	5 10	6 1½	6 5	6 8½	7 0	7 3½	7 7	7 10½
22	6 1½	6 5	6 8½	7 0½	7 4	7 7½	7 11½	8 3
23	6 4½	6 8½	7 0½	7 4½	7 8	8 0	8 3½	8 7½
24	6 8	7 0	7 4	7 8	8 0	8 4	8 8	9 0
25	6 11½	7 3½	7 7½	8 0	8 4	8 8½	9 0½	9 4½
26	7 2½	7 7	7 11½	8 3½	8 8	9 0½	9 4½	9 9
27	7 6	7 10½	8 3	8 7½	9 0	9 4½	9 9	10 1½
28	7 9½	8 2	8 6½	8 11½	9 4	9 8½	10 1½	10 6
29	8 0½	8 5½	8 10½	9 3½	9 8	10 1	10 5½	10 10½
30	8 4	8 9	9 2	9 7	10 0	10 5	10 10	11 3
31	8 7½	9 0½	9 5½	9 11	10 4	10 9½	11 2½	11 7½
32	8 10½	9 4	9 9½	10 2½	10 8	11 1½	11 6½	12 0
33	9 2	9 7½	10 1	10 6½	11 0	11 5½	11 11	12 4½
34	9 5½	9 11	10 4½	10 10½	11 4	11 9½	12 3½	12 9
35	9 8½	10 2½	10 8½	11 2½	11 8	12 2	12 7½	13 1½
36	10 0	10 6	11 0	11 6	12 0	12 6	13 0	13 6

EIGHTEENS.

Ems	14s.	14s6d	15s.	15s6d	16s.	16s6d	17s.	17s6d
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	0 4½	0 5	0 5	0 5½	0 5½	0 5½	0 5½	0 6
2	0 9½	0 9½	0 10	0 10½	0 10½	0 11	0 11½	0 11½
3	1 2	1 2½	1 3	1 3½	1 4	1 4½	1 5	1 5½
4	1 6½	1 7½	1 8	1 8½	1 9½	1 10	1 10½	1 11½
5	1 11½	2 0½	2 1	2 2	2 2½	2 3½	2 4½	2 5½
6	2 4	2 5	2 6	2 7	2 8	2 9	2 10	2 11
7	2 8½	2 10	2 11	3 0½	3 1½	3 2½	3 3½	3 5
8	3 1½	3 2½	3 4	3 5½	3 6½	3 8	3 9½	3 10½
9	3 6	3 7½	3 9	3 10½	4 0	4 1½	4 3	4 4½
10	3 10½	4 0½	4 2	4 3½	4 5½	4 7	4 8½	4 10½
11	4 3½	4 5½	4 7	4 9	4 10½	5 0½	5 2½	5 4½
12	4 8	4 10	5 0	5 2	5 4	5 6	5 8	5 10
13	5 0½	5 3	5 5	5 7½	5 9½	5 11½	6 1½	6 4
14	5 5½	5 7½	5 10	6 0½	6 2½	6 5	6 7½	6 9½
15	5 10	6 0½	6 3	6 5½	6 8	6 10½	7 1	7 3½
16	6 2½	6 5½	6 8	6 10½	7 1½	7 4	7 6½	7 9½
17	6 7½	6 10½	7 1	7 4	7 6½	7 9½	8 0½	8 3½
18	7 0	7 3	7 6	7 9	8 0	8 3	8 6	8 9
19	7 4½	7 8	7 11	8 2½	8 5½	8 8½	8 11½	9 3
20	7 9½	8 0½	8 4	8 7½	8 10½	9 2	9 5½	9 8½
21	8 2	8 5½	8 9	9 0½	9 4	9 7½	9 11	10 2½
22	8 6½	8 10½	9 2	9 5½	9 9½	10 1	10 4½	10 8½
23	8 11½	9 3½	9 7	9 11	10 2½	10 6½	10 10½	11 2½
24	9 4	9 8	10 0	10 4	10 8	11 0	11 4	11 8
25	9 8½	10 1	10 6	10 9½	11 1½	11 5½	11 9½	12 2
26	10 1½	10 5½	10 10	11 2½	11 6½	11 11	12 3½	12 7½
27	10 6	10 10½	11 3	11 7½	12 0	12 4½	12 9	13 1½
28	10 10½	11 3½	11 8	12 0½	12 5½	12 10	13 2½	13 7½
29	11 3½	11 8½	12 1	12 6	12 10½	13 3½	13 8½	14 1½
30	11 8	12 1	12 6	12 11	13 4	13 9	14 2	14 7
31	12 0½	12 6	12 11	13 4½	13 9½	14 2½	14 7½	15 1
32	12 5½	12 10½	13 4	13 9½	14 2½	14 8	15 1½	15 6½
33	12 10	13 3½	13 9	14 2½	14 8	15 1½	15 7	16 0½
34	13 2½	13 8½	14 2	14 7½	15 1½	15 7	16 0½	16 6½
35	13 7½	14 1½	14 7	15 1	15 6½	16 0½	16 6½	17 0½
36	14 0	14 6	15 0	15 6	16 0	16 6	17 0	17 6

EIGHTEENS.

Pag.	18s.		18s6d		19s.		19s6d		20s.		20s6d		21s.		21s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	0	6	0	6½	0	6½	0	6½	0	6½	0	7	0	7	0	7½
2	1	0	1	0½	1	0½	1	1	1	1½	1	1½	1	2	1	2½
3	1	6	1	6½	1	7	1	7½	1	8	1	8½	1	9	1	9½
4	2	0	2	0½	2	1½	2	2	2	2½	2	3½	2	4	2	4½
5	2	6	2	7	2	7½	2	8½	2	9½	2	10½	2	11	3	0
6	3	0	3	1	3	2	3	3	3	4	3	5	3	6	3	7
7	3	6	3	7½	3	8½	3	9½	3	10½	4	0	4	1	4	2½
8	4	0	4	1½	4	2½	4	4	4	5½	4	6½	4	8	4	9½
9	4	6	4	7½	4	9	4	10½	5	0	5	1½	5	3	5	4½
10	5	0	5	1½	5	3½	5	5	5	6½	5	8½	5	10	5	11½
11	5	6	5	8	5	9½	5	11½	6	1½	6	3½	6	5	6	7
12	6	0	6	2	6	4	6	6	6	8	6	10	7	0	7	2
13	6	6	6	8½	6	10½	7	0½	7	2½	7	5	7	7	7	9½
14	7	0	7	2½	7	4½	7	7	7	9½	7	11½	8	2	8	4½
15	7	6	7	8½	7	11	8	1½	8	4	8	6½	8	9	8	11½
16	8	0	8	2½	8	5½	8	8	8	10½	9	1½	9	4	9	6½
17	8	6	8	9	8	11½	9	2½	9	5½	9	8½	9	11	10	2
18	9	0	9	3	9	6	9	9	10	0	10	3	10	6	10	9
19	9	6	9	9½	10	0½	10	3½	10	6½	10	10	11	1	11	4½
20	10	0	10	3½	10	6½	10	10	11	1½	11	4½	11	8	11	11½
21	10	6	10	9½	11	1	11	4½	11	8	11	11½	12	3	12	6½
22	11	0	11	3½	11	7½	11	11	12	2½	12	6½	12	10	13	1½
23	11	6	11	10	12	1½	12	5½	12	9½	13	1½	13	5	13	9
24	12	0	12	4	12	8	13	0	13	4	13	8	14	0	14	4
25	12	6	12	10½	13	2½	13	6½	13	10½	14	3	14	7	14	11½
26	13	0	13	4½	13	8½	14	1	14	5½	14	9½	15	2	15	6½
27	13	6	13	10½	14	3	14	7½	15	0	15	4½	15	9	16	1½
28	14	0	14	4½	14	9½	15	2	15	6½	15	11½	16	4	16	8½
29	14	6	14	11	15	3½	15	8½	16	1½	16	6½	16	11	17	4
30	15	0	15	5	15	10	16	3	16	8	17	1	17	6	17	11
31	15	6	15	11½	16	4½	16	9½	17	2½	17	8	18	1	18	6½
32	16	0	16	5½	16	10½	17	4	17	9½	18	2½	18	8	19	1½
33	16	6	16	11½	17	5	17	10½	18	4	18	9½	19	3	19	8½
34	17	0	17	5½	17	11½	18	5	18	10½	19	4½	19	10	20	3½
35	17	0	18	0	18	5½	18	11½	19	5½	19	11½	20	5	20	11
36	18	0	18	6	19	0	19	6	20	0	20	6	21	0	21	6

EIGHTEENS.

Pag	22s.	22s6d	23s.	23s6d	24s.	24s6d	25s.	25s6d
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	0 7½	0 7¾	0 7¾	0 8	0 8	0 8¼	0 8½	0 8¾
2	1 2¾	1 3	1 3½	1 3¾	1 4	1 4¼	1 4½	1 5
3	1 10	1 10¼	1 11	1 11¼	2 0	2 0¼	2 1	2 1¼
4	2 5¼	2 6	2 6¾	2 7¼	2 8	2 8¾	2 9¼	2 10
5	3 0¾	3 1¼	3 2¼	3 3¼	3 4	3 5	3 5¾	3 6¼
6	3 8	3 9	3 10	3 11	4 0	4 1	4 2	4 3
7	4 3¼	4 4¼	4 5¼	4 7	4 8	4 9¼	4 10¼	4 11¼
8	4 10¾	5 0	5 1¼	5 2¾	5 4	5 5¼	5 6¾	5 8
9	5 6	5 7¼	5 9	5 10¼	6 0	6 1¼	6 3	6 4¼
10	6 1¼	6 3	6 4¼	6 6¼	6 8	6 9¾	6 11¼	7 1
11	6 8¾	6 10¼	7 0¼	7 2¼	7 4	7 6	7 7¾	7 9¼
12	7 4	7 6	7 8	7 10	8 0	8 2	8 4	8 6
13	7 11¼	8 1¼	8 3¼	8 6	8 8	8 10¼	9 0¼	9 2¾
14	8 6¾	8 9	8 11¼	9 1¾	9 4	9 6¼	9 8¾	9 11
15	9 2	9 4¼	9 7	9 9¼	10 0	10 2¾	10 5	10 7¼
16	9 9¼	10 0	10 2¾	10 5¼	10 8	10 10¾	11 1¼	11 4
17	10 4¾	10 7¼	10 10¼	11 1¼	11 4	11 7	11 9¾	12 0¼
18	11 0	11 3	11 6	11 9	12 0	12 3	12 6	12 9
19	11 7¼	11 10¼	12 1¾	12 5	12 8	12 11¼	13 2¼	13 5¼
20	12 2¾	12 6	12 9¼	13 0¾	13 4	13 7¼	13 10¾	14 2
21	12 10	13 1¼	13 5	13 8¼	14 0	14 3¼	14 7	14 10¼
22	13 5¼	13 9	14 0¼	14 4¼	14 8	14 11¾	15 3¼	15 7
23	14 0¾	14 4¼	14 8¼	15 0¼	15 4	15 8	15 11¾	16 3¼
24	14 8	15 0	15 4	15 8	16 0	16 4	16 8	17 0
25	15 3¼	15 7¼	15 11¼	16 4	16 8	17 0¼	17 4¾	17 8¼
26	15 10¾	16 3	16 7¼	16 11¾	17 4	17 8¼	18 0¾	18 5
27	16 6	16 10¼	17 3	17 7¼	17 8	18 4¼	18 9	19 1¼
28	17 1¼	17 6	17 10¼	18 2¼	18 8	19 0¾	19 5¼	19 10
29	17 8¾	18 1¼	18 6¼	18 11¼	19 4	19 9	20 1¾	20 6¼
30	18 4	18 9	19 2	19 7	20 0	20 5	20 10	21 3
31	18 11¼	19 4¼	19 9¼	20 3	20 8	21 1¾	21 6¼	21 11¼
32	19 6¾	20 0	20 5¼	20 10¾	21 4	21 9¼	22 2¾	22 8
33	20 2	20 7¼	21 1	21 6¼	22 0	22 5¼	22 11	23 4¼
34	20 9¼	21 3	21 8¾	22 2¼	22 8	23 1¾	23 7¼	24 1
35	21 4¾	21 10¼	22 4¼	22 10¼	23 4	23 10	24 3¼	24 9¼
36	22 0	22 6	23 0	23 6	24 0	24 6	25 0	25 6

EIGHTEENS.

Pa	26s.	26s6d	27s.	27s6d	28s.	28s6d	29s.	29s6d
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	0 8½	0 9	0 9	0 9½	0 9½	0 9½	0 9½	0 10
2	1 5½	1 5½	1 6	1 6½	1 6½	1 7	1 7½	1 7½
3	2 2	2 2½	2 3	2 3½	2 4	2 4½	2 5	2 5½
4	2 10½	2 11½	3 0	3 0½	3 1½	3 2	3 2½	3 3½
5	3 7½	3 8½	3 9	3 10	3 10½	3 11½	4 0½	4 1½
6	4 4	4 5	4 6	4 7	4 8	4 9	4 10	4 11
7	5 0½	5 2	5 3	5 4½	5 5½	5 6½	5 7½	5 9
8	5 9½	5 10½	6 0	6 1½	6 2½	6 4	6 5½	6 6½
9	6 6	6 7½	6 9	6 10½	7 0	7 1½	7 3	7 4½
10	7 2½	7 4½	7 6	7 7½	7 9½	7 11	8 0½	8 2½
11	7 11½	8 1½	8 3	8 5	8 6½	8 8½	8 10½	9 0½
12	8 8	8 10	9 0	9 2	9 4	9 6	9 8	9 10
13	9 4½	9 7	9 9	9 11½	10 1½	10 3½	10 5½	10 8
14	10 1½	10 3½	10 6	10 8½	10 10½	11 1	11 3½	11 5
15	10 10	11 0½	11 3	11 5½	11 8	11 10½	12 0½	12 3½
16	11 6½	11 9½	12 0	12 2½	12 5½	12 8	12 10½	13 1½
17	12 3½	12 6½	12 9	13 0	13 2½	13 5½	13 8½	13 11½
18	13 0	13 3	13 6	13 9	14 0	14 3	14 6	14 9
19	13 8½	14 0	14 3	14 6½	14 9½	15 0½	15 3½	15 7
20	14 5½	14 8½	15 0	15 3½	15 6½	15 10	16 1½	16 4½
21	15 2	15 5½	15 9	16 0½	16 4	16 7½	16 11	17 2½
22	15 10½	16 2½	16 6	16 9½	17 1½	17 5	17 8½	18 0½
23	16 7½	16 11½	17 3	17 7	17 10½	18 2½	18 6½	18 10½
24	17 4	17 8	18 0	18 4	18 8	19 0	19 4	19 8
25	18 0½	18 5	18 9	19 1½	19 5½	19 9½	20 1½	20 6
26	18 9½	19 1½	19 6	19 10½	20 2½	20 7	20 11½	21 3½
27	19 6	19 10½	20 3	20 7½	21 0	21 4½	21 9	22 1½
28	20 2½	20 7½	21 0	21 4½	21 9½	22 2	22 6½	22 11½
29	20 11½	21 4½	21 9	22 2	22 6½	22 11½	23 4½	23 9½
30	21 8	22 1	22 6	22 11	23 4	23 9	24 2	24 7
31	22 4½	22 10	23 3	23 8½	24 1½	24 6½	24 11½	25 5
32	23 1½	23 6½	24 0	24 5½	24 10½	25 4	25 9½	26 2½
33	23 10	24 3½	24 9	25 2½	25 8	26 1½	26 7	27 0½
34	24 6½	25 0½	25 6	25 11½	26 5½	26 11	27 4½	27 10½
35	25 3½	25 9½	26 3	26 9	27 2½	27 8½	28 2½	28 8½
36	26 0	26 6	27 0	27 6	28 0	28 6	29 0	29 6

EIGHTRENS.

doz.	30s.	30s6d	31s.	31s6d	32s.	32s6d	33s.	33s6d
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	0 10	0 10½	0 10½	0 10½	0 10½	0 11	0 11	0 11½
2	1 8	1 8½	1 8½	1 9	1 9½	1 9½	1 10	1 10½
3	2 6	2 6½	2 7	2 7½	2 8	2 8½	2 9	2 9½
4	3 4	3 4½	3 5½	3 6	3 6½	3 7½	3 8	3 8½
5	4 2	4 3	4 3½	4 4½	5 5½	4 6½	4 7	4 8
6	5 0	5 1	5 2	5 3	5 4	5 5	5 6	5 7
7	5 10	5 11½	6 0½	6 1½	6 2½	6 4	6 5	6 6½
8	6 8	6 9½	6 10½	7 0	7 1½	7 2½	7 4	7 5½
9	7 6	7 7½	7 9	7 10½	8 0	8 1½	8 3	8 4½
10	8 4	8 5½	8 7½	8 9	8 10½	9 0½	9 2	9 3½
11	9 2	9 4	9 5½	9 7½	9 9½	9 11½	10 1	10 3
12	10 0	10 2	10 4	10 6	10 8	10 10	11 0	11 2
13	10 10	11 0½	11 2½	11 4½	11 6½	11 9	11 11	12 1½
14	11 8	11 10½	12 0½	12 3	12 5½	12 7½	12 10	13 0½
15	12 6	12 8½	12 11	13 1½	13 4	13 6½	13 9	13 11½
16	13 4	13 6½	13 9½	14 0	14 2½	14 5½	14 8	14 10½
17	14 2	14 5	14 7½	14 10½	15 1½	15 4½	15 7	15 10
18	15 0	15 3	15 6	15 9	16 0	16 3	16 6	16 9
19	15 10	16 1½	16 4½	16 7½	16 10½	17 2	17 5	17 8½
20	16 8	16 11½	17 2½	17 6	17 9½	18 0½	18 4	18 7½
21	17 6	17 9½	18 1	18 4½	18 8	18 11½	19 3	19 6½
22	18 4	18 7½	18 11½	19 3	19 6½	19 10½	20 2	20 5½
23	19 2	19 6	19 9½	20 1½	20 5½	20 9½	21 1	21 5
24	20 0	20 4	20 8	21 0	21 4	21 8	22 0	22 4
25	20 10	21 2½	21 6½	21 10½	22 2½	22 7½	22 11	23 3½
26	21 8	22 0½	22 4½	22 9	23 1½	23 5½	23 10	24 2½
27	22 6	22 10½	23 3	23 7½	24 0	24 4½	24 9	25 1½
28	23 4	23 8½	24 1½	24 6	24 10½	25 3½	25 8	26 0½
29	24 2	24 7	24 11½	25 4½	25 9½	26 2½	26 7	27 0
30	25 0	25 5	25 10	26 3	26 8	27 1	27 6	27 11
31	25 10	26 3½	26 8½	27 1½	27 6½	28 0	28 5	28 10½
32	26 8	27 1½	27 6½	28 0	28 5½	28 10½	29 4	29 9½
33	27 6	27 11½	28 5	28 10½	29 4	29 9½	30 3	30 8½
34	28 4	28 9½	29 3½	29 9	30 2½	30 8½	31 2	31 7½
35	29 2	29 8	30 1½	30 7½	31 1½	31 7½	32 1	32 7
36	30 0	30 6	31 0	31 6	32 0	32 6	33 0	33 6

EIGHTEENS.

℔	34s.		34s6d		35s.		35s6d		36s.		36s6d		37s.		37s6d	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
1	0	11½	0	11½	0	11½	1	0	1	0	1	0½	1	0½	1	0½
2	1	10½	1	11	1	11½	1	11½	2	0	2	0½	2	0½	2	1
3	2	10	2	10½	2	11	2	11½	3	0	3	0½	3	1	3	1½
4	3	9½	3	10	3	10½	3	11½	4	0	4	0½	4	1½	4	2
5	4	8½	4	9½	4	10½	4	11½	5	0	5	1	5	1½	5	2½
6	5	8	5	9	5	10	5	11	6	0	6	1	6	2	6	3
7	6	7½	6	8½	6	9½	6	11	7	0	7	1½	7	2½	7	3½
8	7	6½	7	8	7	9½	7	10½	8	0	8	1½	8	2½	8	4
9	8	6	8	7½	8	9	8	10½	9	0	9	1½	9	3	9	4½
10	9	5½	9	7	9	8½	9	10½	10	0	10	1½	10	3½	10	5
11	10	4½	10	6½	10	8½	10	10½	11	0	11	2	11	3½	11	5½
12	11	4	11	6	11	8	11	10	12	0	12	2	12	4	12	6
13	12	3½	12	5½	12	7½	12	10	13	0	13	2½	13	4½	13	6½
14	13	2½	13	5	13	7½	13	9½	14	0	14	2½	14	4½	14	7
15	14	2	14	4½	14	7	14	9½	15	0	15	2½	15	5	15	7½
16	15	1½	15	4	15	6½	15	9½	16	0	16	2½	16	5½	16	8
17	16	0½	16	3½	16	6½	16	9½	17	0	17	3	17	5½	17	8½
18	17	0	17	3	17	6	17	9	18	0	18	3	18	6	18	9
19	17	11½	18	2½	18	5½	18	9	19	0	19	3½	19	6½	19	9½
20	18	10½	19	2	19	5½	19	8½	20	0	20	3½	20	6½	20	10
21	19	10	20	1½	20	5	20	8½	21	0	21	3½	21	7	21	10½
22	20	0½	21	1	21	4½	21	8½	22	0	22	3½	22	7½	22	11
23	21	8½	22	0½	22	4½	22	8½	23	0	23	4	23	7½	23	11½
24	22	8	23	0	23	4	23	8	24	0	24	4	24	8	25	0
25	23	7½	23	11½	24	3½	24	8	25	0	25	4½	25	8½	26	0½
26	24	6½	24	11	25	3½	25	7½	26	0	26	4½	26	8½	27	1
27	25	6	25	10½	26	3	26	7½	27	0	27	4½	27	9	28	1½
28	26	5½	26	10	27	2½	27	7½	28	0	28	4½	28	9½	29	2
29	27	4½	27	9½	28	2½	28	7½	29	0	29	5	29	9½	30	2½
30	28	4	28	9	29	2	29	7	30	0	30	5	30	10	31	3
31	29	3½	29	8½	30	1½	30	7	31	0	31	5½	31	10½	32	3½
32	30	2½	30	8	31	1½	31	6½	32	0	32	5½	32	10½	33	4
33	31	2	31	7½	32	1	32	6½	33	0	33	5½	33	11	34	4½
34	32	1½	32	7	33	0½	33	6½	34	0	34	5½	34	11½	35	5
35	33	0½	33	6½	34	0½	34	6½	35	0	35	6	35	11½	36	5½
36	34	0	34	6	35	0	35	6	36	0	36	6	37	0	37	6

EIGHTEENS.

Pag.	38s.	38s6d	39s.	39s6d	40s.	40s6d	41s.	41s6d
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1	1 0½	1 1	1 1	1 1½	1 1½	1 1½	1 1½	1 2
2	2 1½	2 1½	2 2	2 2½	2 2½	2 3	2 3½	2 3½
3	3 2	3 2½	3 3	3 3½	3 4	3 4½	3 5	3 5½
4	4 2½	4 3½	4 4	4 4½	4 5½	4 6	4 6½	4 7½
5	5 3½	5 4½	5 5	5 6	5 6½	5 7½	5 8½	5 9½
6	6 4	6 5	6 6	6 7	6 8	6 9	6 10	6 11
7	7 4½	7 6	7 7	7 8½	7 9½	7 10½	7 11½	8 1
8	8 5½	8 6½	8 8	8 9½	8 10½	9 0	9 1½	9 2½
9	9 6	9 7½	9 9	9 10½	10 0	10 1½	10 3	10 4½
10	10 6½	10 8½	10 10	10 11½	11 1½	11 3	11 4½	11 6½
11	11 7½	11 9½	11 11	12 1	12 2½	12 4½	12 6½	12 8½
12	12 8	12 10	13 0	13 2	13 4	13 6	13 8	13 10
13	13 8½	13 11	14 1	14 3½	14 5½	14 7½	14 9½	15 0
14	14 9½	14 11½	15 2	15 4½	15 6½	15 9	15 11½	16 1½
15	15 10	16 0½	16 3	16 5½	16 8	16 10½	17 1	17 3½
16	16 10½	17 1½	17 4	17 6½	17 9½	18 0	18 2½	18 5½
17	17 11½	18 2½	18 5	18 8	18 10½	19 1½	19 4½	19 7½
18	19 0	19 3	19 6	19 9	20 0	20 3	20 6	20 9
19	20 0½	20 4	20 7	20 10½	21 1½	21 4½	21 7½	21 11
20	21 1½	21 4½	21 8	21 11½	22 2½	22 6	22 9½	23 0½
21	22 2	22 5½	22 9	23 0½	23 4	23 7½	23 11	24 2½
22	23 2½	23 6½	23 10	24 1½	24 5½	24 9	25 0½	25 4½
23	24 3½	24 7½	24 11	25 3	25 6½	25 10½	26 2½	26 6½
24	25 4	25 8	26 0	26 4	26 8	27 0	27 4	27 8
25	26 4½	26 9	27 1	27 5½	27 9½	28 1½	28 5½	28 10
26	27 5½	27 9½	28 2	28 6½	28 10½	29 3	29 7½	29 11½
27	28 6	28 10½	29 3	29 7½	30 0	30 4½	30 9	31 1½
28	29 6½	29 11½	30 4	30 8½	31 1½	31 6	31 10½	32 3½
29	30 7½	31 0½	31 5	31 10	32 2½	32 7½	33 0½	33 5½
30	31 8	32 1	32 6	32 11	33 4	33 9	34 2	34 7
31	32 8½	33 2	33 7	34 0½	34 5½	34 10½	35 3½	35 9
32	33 9½	34 2½	34 8	35 1½	35 6½	36 0	36 5½	36 10½
33	34 10	35 3½	35 9	36 2½	36 8	37 1½	37 7	38 0½
34	35 10½	36 4½	36 10	37 3½	37 9½	38 3	38 8½	39 2½
35	36 11½	37 5½	37 11	38 5	38 10½	39 4½	39 10½	40 4½
36	38 0	38 6	39 0	39 6	40 0	40 6	41 0	41 6

EIGHTEENS.

Pg.	42s.		42s6d		43s.		43s6d		44s.		44s6d		45s.		45s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	1	2	1	2½	1	2½	1	2½	1	2¾	1	2¾	1	3	1	3
2	2	4	2	4½	2	4¾	2	5	2	5¼	2	5¼	2	6	2	6¼
3	3	6	3	6½	3	7	3	7½	3	8	3	8½	3	9	3	9½
4	4	8	4	8¾	4	9½	4	10	4	10¾	4	11¼	5	0	5	0½
5	5	10	5	11	5	11¾	6	0½	6	1¼	6	2¼	6	3	6	3¾
6	7	0	7	1	7	2	7	3	7	4	7	5	7	6	7	7
7	8	2	8	3½	8	4½	8	5½	8	6¾	8	8	8	9	8	10½
8	9	4	9	5½	9	6¾	9	8	9	9½	9	10¾	10	0	10	1½
9	10	6	10	7½	10	9	10	10½	11	0	11	1½	11	3	11	4½
10	11	8	11	9¾	11	11½	12	1	12	2½	12	4¼	12	6	12	7¾
11	12	10	13	0	13	1¾	13	3½	13	5¼	13	7¼	13	9	13	11
12	14	0	14	2	14	4	14	6	14	8	14	10	15	0	15	2¼
13	15	2	15	4¼	15	6½	15	8½	15	10½	16	0¾	16	3	16	5¼
14	16	4	16	6½	16	8¾	16	11	17	1¼	17	3½	17	6	17	8½
15	17	6	17	8½	17	11	18	1½	18	3¾	18	6½	18	9	18	11¾
16	18	8	18	10¾	19	1½	19	4	19	6½	19	9½	20	0	20	3
17	19	10	20	1	20	3¾	20	6½	21	9¼	21	0	21	3	21	6
18	21	0	21	3	21	6	21	9	22	0	22	3	22	6	22	9
19	22	2	22	5½	22	8½	22	11½	23	2½	23	5¾	23	9	24	0
20	23	4	23	7½	23	10¾	24	2	24	5½	24	8½	25	0	25	3¼
21	24	6	24	9½	25	1	25	4½	25	7¾	25	11½	26	3	26	6½
22	25	8	25	11¾	26	3½	26	7	26	10½	27	2½	27	6	27	9¾
23	26	10	27	2	27	5¾	27	9½	28	1	28	5¼	28	9	29	0¾
24	28	0	28	4	28	8	29	0	29	3¾	29	8	30	0	30	4
25	29	2	29	6½	29	10½	30	2½	30	6½	30	10¾	31	3	31	7¼
26	30	4	30	8½	31	0¾	31	5	31	9	32	1¾	32	6	32	10½
27	31	6	31	10½	32	3	32	7½	33	0	33	4½	33	9	34	1½
28	32	8	33	0¾	33	5½	33	10	34	2¾	34	7¼	35	0	35	4¾
29	33	10	34	3	34	7¾	35	0½	35	5½	35	10	36	3	36	8
30	35	0	35	5	35	10	36	3	36	8	37	0¾	37	6	37	11¼
31	36	2	36	7½	37	0½	37	5½	37	10½	38	4	38	9	39	2¼
32	37	4	37	9½	38	2¾	38	8	39	1¼	39	6½	40	0	40	5½
33	38	6	38	11½	39	5	39	10½	40	3¾	40	9¼	41	3	41	8¾
34	39	8	40	1¾	40	7½	41	1	41	6½	42	0¼	42	6	43	0
35	40	10	41	4	41	9¾	42	3½	42	9¼	43	3	42	9	44	3
36	42	0	42	6	43	0	43	6	44	0	44	9	45	0	45	6

THIRTY TWOS.

No.	12s.	12s6d	13s.	13s6d	14s.	14s6d	15s.	15s6d
	s d	s d	s d	s d	s d	s d	s d	s d
1	2½	2½	2½	2¾	2¾	2¾	2¾	3
2	4½	4½	5	5½	5½	5½	6½	6½
3	6¾	7	7½	7¾	8	8	8½	8¾
4	9	9½	9¾	10½	10½	10¾	11¼	11½
5	11¼	11¾	1 0½	1 0½	1 1¼	1 1¾	1 2	1 2½
6	1 1½	1 2½	1 2½	1 3½	1 3½	1 4½	1 4½	1 5½
7	1 3½	1 4½	1 5	1 6½	1 6½	1 7	1 7½	1 8½
8	1 6	1 6½	1 7½	1 8½	1 9	1 9½	1 10½	1 11½
9	1 8½	1 9	1 9¾	1 11	1 11½	2 0½	2 1½	2 2
10	1 10½	1 11½	2 0½	2 1½	2 2½	2 3½	2 4	2 5
11	2 0½	2 1½	2 2½	2 4	2 4½	2 6	2 6½	2 7½
12	2 3	2 4	2 5½	2 6½	2 7½	2 8½	2 9½	2 10½
13	2 5½	2 6½	2 7½	2 9	2 10	2 11½	3 0½	3 1½
14	2 7½	2 8½	2 10	2 11½	3 0½	3 2½	3 3½	3 4½
15	2 9½	2 11½	3 0½	3 2	3 3½	3 5	3 6	3 7½
16	3 0	3 1½	3 3	3 4½	3 6	3 7½	3 9	3 10½
17	3 2½	3 4	3 5½	3 7	3 8½	3 10½	3 11½	4 1½
18	3 4½	3 6½	3 7½	3 9½	3 11½	4 1	4 2½	4 4½
19	3 6½	3 8½	3 10½	4 0	4 1½	4 3½	4 5½	4 7
20	3 9	3 11	4 0½	4 2½	4 4½	4 6½	4 8½	4 10
21	3 11½	4 1½	4 3	4 5	4 7½	4 9½	4 11	5 0½
22	4 1½	4 3½	4 5½	4 7½	4 9½	5 0	5 1½	5 3½
23	4 3½	4 6	4 8	4 10	5 0½	5 2½	5 4½	5 6½
24	4 6	4 8½	4 10½	5 0½	5 3	5 5½	5 7½	5 9½
25	4 8½	4 10½	5 0½	5 3½	5 5½	5 8½	5 10½	6 0½
26	4 10½	5 1½	5 3½	5 5½	5 8½	6 11	6 1	6 3½
27	5 0½	5 3½	5 5½	5 8½	5 11	6 1½	6 3½	6 6½
28	5 3	5 6	5 8	5 10½	6 1½	6 4½	6 6½	6 9½
29	5 5½	5 8	5 10½	6 1½	6 4½	6 7½	6 9½	7 0
30	5 7½	5 10½	6 0½	6 3½	6 6½	6 10	7 0½	7 3
31	5 9½	6 1	6 3½	6 6½	6 9½	7 0½	7 3	7 6
32	6 0	6 3	6 6	6 9	7 0	7 3	7 6	7 9
33	6 2½	6 5½	6 8½	6 11½	7 2½	7 5½	7 8½	7 11½
34	6 4½	6 7	6 10½	7 2	7 5½	7 8½	7 11½	8 2½
35	6 6½	6 10	7 1½	7 4½	7 8	7 11½	8 2½	8 5½
36	6 9	7 0½	7 3½	7 7	7 10½	8 2	8 5½	8 8½
37	6 11½	7 2½	7 6	7 9½	8 1½	8 4½	8 8	8 11½
38	7 1½	7 5½	7 8½	8 0	8 3½	8 7½	8 10½	9 2½
39	7 3½	7 7½	7 10½	8 2½	8 6½	8 10½	9 1½	9 5½
40	7 6	7 9½	8 1½	8 5½	8 8½	9 1	9 4½	9 8½
41	7 8½	8 0½	8 3½	8 8	8 11½	9 .3½	9 7½	9 11

THIRTY TWOS.

qrs	12s.	12s6d	13s.	13s6d	14s.	14s6d	15s.	15s6d
	s d	s d	s d	s d	s d	s d	s d	s d
42	7 10½	8 2½	8 6	8 10½	9 2	9 6½	9 10	10 3
43	8 0½	8 5	8 8½	9 1	9 4½	9 9½	10 0½	10 4½
44	8 3	8 7½	8 11	9 3½	9 7½	10 0	10 3½	10 7½
45	8 5½	8 9½	9 1½	9 6	9 10	10 2½	10 6½	10 10½
46	8 7½	9 0	9 4	9 8½	10 0½	10 5½	10 9½	11 1½
47	8 9½	9 2½	9 6	9 11	10 3½	10 8½	11 0	11 4½
48	9 0	9 4½	9 9	10 1½	10 5½	10 11	11 3	11 7½
49	9 2½	9 6½	9 11½	10 4½	10 8½	11 1½	11 5½	11 10½
50	9 4½	9 9½	10 1½	10 6½	10 11	11 4½	11 8½	12 1½
51	9 6½	9 11½	10 4½	10 9½	11 1½	11 7½	11 11½	12 4
52	9 9	10 2	10 6½	10 11½	11 4½	11 10	12 2½	12 7
53	9 11½	10 4½	10 9	11 2½	11 7	12 0½	12 5	12 9½
54	10 1½	10 6½	10 11½	11 4½	11 9½	12 3½	12 7½	13 0½
55	10 3½	10 9	11 1½	11 7½	12 0½	12 6½	12 10½	13 3½
56	10 6	10 11½	11 4½	11 9½	12 2½	12 9	13 1½	13 6½
57	10 8½	11 1½	11 6½	12 0½	12 5½	12 11½	13 4½	13 9½
58	10 10½	11 4½	11 9½	12 3	12 8	13 2½	13 7	14 0½
59	11 0½	11 6½	11 11½	12 5½	12 10½	13 5½	13 9½	14 3½
60	11 3	11 9	12 2½	12 8	13 1½	13 8	14 0½	14 6½
61	11 5½	11 11½	12 4½	12 10½	13 4	13 10½	14 3½	14 9
62	11 7½	12 1½	12 7½	13 1	13 6½	14 1	14 6½	15 0
63	11 9½	12 3½	12 9½	13 3½	13 9½	14 3½	14 9	15 3
64	12 0	12 6	13 0	13 6	14 0	14 6	15 0	15 6

qrs	16s.	16s6d	17s.	17s6d	18s.	18s6d	19s.	19s6d
	s d	s d	s d	s d	s d	s d	s d	s d
1	3	3½	3½	3½	3½	3½	3½	3½
2	6	6½	6½	6½	6½	6½	7½	7½
3	9	9½	9½	9½	10½	10½	10½	11
4	1 0	1 0½	1 0½	1 1	1 1½	1 1½	1 2½	1 2½
5	1 3	1 3½	1 4	1 4½	1 5	1 5½	1 6	1 6½
6	1 6	1 6½	1 7½	1 7½	1 8½	1 8½	1 9½	1 10
7	1 9	1 9½	1 10½	1 10½	1 11½	2 0½	2 1	2 1½
8	2 0	2 0½	2 1½	2 2½	2 3	2 3½	2 4½	2 5½
9	2 3	2 4	2 4½	2 5½	2 6½	2 7	2 8½	2 9
10	2 6	2 7½	2 8	2 8½	2 9½	2 10½	2 11½	3 0½
11	2 9	2 10½	2 11½	3 0	3 1½	3 2	3 3½	3 4½
12	3 0	3 1½	3 2½	3 3½	3 4½	3 5½	3 6½	3 7½
13	3 3	3 4½	3 5½	3 6½	3 8	3 9	3 10½	3 11½

THIRTY TWOS.

Ems	16s.		16s6d		17s.		17s6d		18s.		18s6d		19s.		19s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
14	3	6	3	7½	3	8½	3	9½	3	11	4	0½	4	2	4	3½
15	3	9	3	10½	4	0	4	1	4	2½	4	4	4	5½	4	6½
16	4	0	4	1½	4	3	4	4½	4	6	4	7½	4	9	4	10½
17	4	3	4	4½	4	6½	4	7½	4	9½	4	10½	5	0½	5	2½
18	4	6	4	8	4	9½	4	11	5	0½	5	2½	5	4½	5	6½
19	4	9	4	11½	5	0½	5	2½	5	4½	5	5½	5	7½	5	9½
20	5	0	5	2½	5	3½	5	5½	5	7½	5	9½	5	11½	6	1
21	5	3	5	5½	5	7	5	8½	5	11	6	0½	6	3	6	4½
22	5	6	5	8½	5	10½	6	0	6	2½	6	4½	6	6½	6	8½
23	5	9	5	11½	6	1½	6	3½	6	5½	6	7½	6	10	7	0
24	6	0	6	2½	6	4½	6	6½	6	9	6	11½	7	1½	7	3½
25	6	3	6	5½	6	7½	6	10	7	0½	7	2½	7	5½	7	7½
26	6	6	6	8½	6	11	7	1½	7	3½	7	6	7	8½	7	11
27	6	9	7	0	7	2½	7	4½	7	7½	7	9½	8	0½	8	2½
28	7	0	7	3	7	5½	7	7½	7	10½	8	1	8	3½	8	6½
29	7	3	7	6	7	8½	7	11	8	2	8	4½	8	7½	8	10
30	7	6	7	9	7	11½	8	2½	8	5½	8	8	8	11	9	1½
31	7	9	8	0	8	3	8	5½	8	8½	8	11½	9	2½	9	5½
32	8	0	8	3	8	6	8	9	9	0	9	3	9	6	9	9
33	8	3	8	6½	8	9½	9	0½	9	3½	9	6½	9	9½	10	0½
34	8	6	8	9½	9	0½	9	3½	9	6½	9	9½	10	1½	10	4½
35	8	9	9	0½	9	3½	9	6½	9	10½	10	1½	10	4½	10	8
36	9	0	9	3½	9	6½	9	10	10	1½	10	4½	10	8½	10	11½
37	9	3	9	6½	9	10	10	1½	10	5	10	8½	11	0	11	3½
38	9	6	9	9½	10	1½	10	4½	10	8½	10	11½	11	3½	11	7
39	9	9	10	0½	10	4½	10	7½	10	11½	11	8½	11	7	11	10½
40	10	0	10	3½	10	7½	10	11½	11	3	11	6½	11	10½	12	2½
41	10	3	10	7	10	10½	11	2½	11	6½	11	10	12	2½	12	6½
42	10	6	10	10½	11	2	11	5½	11	9½	12	1½	12	5½	12	9½
43	10	9	11	1½	11	5½	11	9	12	1½	12	5	12	9½	13	1½
44	11	0	11	4½	11	8½	12	0½	12	4½	12	8½	13	0½	13	6
45	11	3	11	7½	11	11½	12	3½	12	8	13	0	13	4½	13	8½
46	11	6	11	10½	12	2½	12	6½	12	11½	13	3½	13	8	14	0½
47	11	9	12	1½	12	6	12	10	13	2½	13	7	13	11½	14	4
48	12	0	12	4½	12	9	13	1½	13	6	13	10½	14	3	14	7½
49	12	3	12	7½	13	0½	13	4½	13	9½	14	1½	14	6½	14	11½
50	12	6	12	11	13	3½	13	8	14	0½	14	5½	14	10½	15	3
51	12	9	13	2½	13	6½	13	11½	14	4½	14	8½	15	1½	15	6½
52	13	0	13	5½	13	9½	14	2½	14	7½	15	0½	15	5½	15	10½
53	13	3	13	8½	14	1	14	5½	14	11	15	3½	15	9	16	2
54	13	6	13	11½	14	4½	14	9	15	2½	15	7½	16	0½	16	5½

THIRTY TWOS.

Sh.	16s.		16s6d		17s.		17s6d		18s.		18s6d		19s.		19s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
55	13	9	14	2½	14	7½	15	0½	15	5½	15	10½	16	4	16	9½
56	14	0	14	5½	14	10½	15	3½	15	9	16	2½	16	7½	17	1
57	14	3	14	8½	15	1½	15	7	16	0½	16	5½	16	11½	17	4½
58	14	6	14	11½	15	5	15	10½	16	3½	16	9	17	2½	17	8½
59	14	9	15	3	15	8½	16	1½	16	7½	17	0½	17	6½	17	11½
60	15	0	15	6	15	11½	16	4½	16	10½	17	4	17	9½	18	3½
61	15	3	15	9	16	2½	16	8	17	2	17	7½	18	1½	18	7½
62	15	6	16	0	16	5½	16	11½	17	5½	17	11	18	5	18	10½
63	15	9	16	3	16	9	17	2½	17	8½	18	2½	18	8½	19	2½
64	16	0	16	6	17	0	17	6	18	0	18	6	19	0	19	6

Sh.	20s.		20s6d		21s.		21s6d		22s.		22s6d		23s.		23s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1		3½		3½		4		4		4½		4½		4½		4½
2		7½		7½		7½		8		8½		8½		8½		8½
3		11½		11½		11½	1	0	1	0½	1	0½	1	0½	1	1½
4	1	3	1	3½	1	3½	1	4	1	4½	1	4½	1	5½	1	6½
5	1	6½	1	7½	1	7½	1	8	1	8½	1	9	1	9½	1	10
6	1	10½	1	11½	1	11½	2	0	2	0½	2	1½	2	1½	2	2½
7	2	2½	2	3	2	3½	2	4½	2	5	2	5½	2	6	2	6½
8	2	6	2	6½	2	7½	2	8½	2	9	2	9½	2	10½	2	11½
9	2	9½	2	10½	2	11½	3	0½	3	1½	3	1½	3	2½	3	3½
10	3	1½	3	2½	3	3½	3	4½	3	5½	3	6	3	7	3	8
11	3	5½	3	6½	3	7½	3	8½	3	9½	3	10½	3	11½	4	0½
12	3	9	3	10½	3	11½	4	0½	4	1½	4	2½	4	3½	4	4½
13	4	0½	4	2	4	3	4	4½	4	5½	4	6½	4	8	4	9½
14	4	4½	4	6	4	7	4	8½	4	9½	4	11	5	0½	5	1½
15	4	8½	4	9½	4	11	5	0½	5	2	5	3½	5	4½	5	6
16	5	0	5	1½	5	3	5	4½	5	6	5	7½	5	9	5	10½
17	5	3½	5	5½	5	6½	5	8½	5	10½	5	11½	6	1½	6	2½
18	5	7½	5	9½	5	10½	6	0½	6	2½	6	3½	6	5½	6	7½
19	5	11½	6	1	6	2½	6	4½	6	6½	6	8	6	9½	6	11½
20	6	3	6	4½	6	6½	6	8½	6	10½	7	0½	7	2½	7	4
21	6	6½	6	8½	6	10½	7	0½	7	2½	7	4½	7	6½	7	8½
22	6	10½	7	0½	7	2½	7	4½	7	6½	7	8½	7	10½	8	0½
23	7	2½	7	4½	7	6½	7	8½	7	11	8	1	8	3	8	5½
24	7	6	7	8½	7	10½	8	0½	8	3	8	5½	8	7½	8	9½
25	7	9½	8	0	8	2½	8	4½	8	7½	8	9½	8	11½	9	2
26	8	1½	8	4	8	6½	8	8½	8	11½	9	1½	9	4	9	6½

THIRTY TWOS.

Sh.	20s.	20s6d	21s.	21s6d	22s.	22s6d	23s.	23s6d
	s d	s d	s d	s d	s d	s d	s d	s d
27	8 5½	8 7½	8 10½	9 0½	9 3½	9 5½	9 8½	9 11
28	8 9	8 11½	9 2½	9 4½	9 7½	9 10	10 0½	10 3½
29	9 0½	9 3½	9 6	9 8½	9 11½	10 2½	10 5	10 7½
30	9 4½	9 7½	9 10	10 0½	10 3½	10 6½	10 9½	11 0
31	9 8½	9 11½	10 2	10 5	10 8	10 10½	11 1½	11 4½
32	10 0	10 3	10 6	10 9	11 0	11 3	11 6	11 9
33	10 3½	10 6½	10 9½	11 1	11 4½	11 7	11 10½	12 1½
34	10 7½	10 10½	11 1½	11 5	11 8½	11 11½	12 2½	12 5½
35	10 11½	11 2½	11 5½	11 9	12 0½	12 3½	12 6½	12 10½
36	11 3	11 6½	11 9½	12 1	12 4½	12 7½	12 11½	13 2½
37	11 6½	11 10½	12 1½	12 5	12 8½	13 0	13 3½	13 7
38	11 10½	12 2	12 5½	12 9	13 0½	13 4½	13 7½	13 11½
39	12 2½	12 6	12 9½	13 1½	13 5	13 8½	14 0	14 3½
40	12 6	12 9½	13 1½	13 5½	13 9	14 0½	14 4½	14 8½
41	12 9½	13 1½	13 5½	13 9½	14 1½	14 4½	14 8½	15 0½
42	13 1½	13 5½	13 9½	14 1½	14 5½	14 9	15 1	15 5
43	13 5½	13 9½	14 1½	14 5½	14 9½	15 1½	15 5½	15 9½
44	13 9	14 1	14 5½	14 9½	15 1½	15 5½	15 9½	16 1½
45	14 0½	14 5	14 9	15 1½	15 5½	15 9½	16 2	16 6½
46	14 4½	14 8½	15 1	15 5½	15 9½	16 2	16 6½	16 10½
47	14 8½	15 0½	15 5	15 9½	16 2	16 6½	16 10½	17 3
48	15 0	15 4½	15 9	16 1½	16 6	16 10½	17 3	17 7½
49	15 3½	15 8½	16 0½	16 5½	16 10½	17 2½	17 7½	17 11½
50	15 7½	16 0½	16 4½	16 9½	17 2½	17 6½	17 11½	18 4½
51	15 11½	16 4	16 8½	17 1½	17 6½	17 11	18 3½	18 8½
52	16 2	16 7½	17 0½	17 5½	17 10½	18 3½	18 8½	19 1
53	16 6½	16 11½	17 4½	17 9½	18 2½	18 7½	19 0½	19 5½
54	16 10½	17 3½	17 8½	18 1½	18 6½	18 11½	19 4½	19 9½
55	17 2½	17 7½	18 0½	18 5½	18 11	19 4	19 9	20 2½
56	17 6	17 11½	18 4½	18 9½	19 3	19 8	20 1½	20 6½
57	17 9½	18 3	18 9½	19 1½	19 7½	20 0½	20 5½	20 11
58	18 1½	18 7	19 0½	19 5½	19 11½	20 4½	20 10	21 3½
59	18 5½	18 10½	19 4½	19 9½	20 3½	20 8½	21 2½	21 8
60	18 9	19 2½	19 8½	20 1½	20 6½	21 0½	21 6½	22 0½
61	19 0½	19 6½	20 0	20 5½	20 11½	21 4½	21 11	22 4½
62	19 4½	19 10½	20 4	20 9½	21 3½	21 8½	22 3½	22 9
63	19 8½	20 2½	20 8	21 2	21 8	22 2	22 7½	23 1½
64	20 0	20 6	21 0	21 6	22 0	21 1	23 0	23 6

THIRTY TWOS.

	24s.		24s6d		25s.		25s6d		26s.		26s6d		27s.		27s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1		4½		4½		4½		4½		5		5		5½		5½
2		9		9½		9½		9½		9½		9½		10½		10½
3	1	1½	1	2	1	2½	1	2½	1	2½	1	2½	1	3½	1	3½
4	1	6	1	6½	1	6½	1	7	1	7½	1	7½	1	8½	1	8½
5	1	10½	1	11	1	11½	1	11½	2	0½	2	0½	2	1½	2	1½
6	2	3	2	3½	2	4½	2	4½	2	5½	2	5½	2	6½	2	6½
7	2	7½	2	8	2	9	2	9½	2	10½	2	10½	2	11½	3	0
8	3	0	3	0½	3	1½	3	2½	3	3	3	3½	3	4½	3	5½
9	3	4½	3	5½	3	6½	3	7	3	8	3	8½	3	9½	3	10½
10	3	9	3	10	3	11	3	11½	4	0½	4	1½	4	2½	4	3½
11	4	1½	4	2½	4	3½	4	4½	4	5½	4	6½	4	7½	4	8½
12	4	6	4	7½	4	8½	4	9½	4	10½	4	11½	5	0½	5	1½
13	4	10½	4	11½	5	1	5	2	5	3½	5	4½	5	6	5	7
14	5	3	5	4½	5	5½	5	6½	5	8½	5	9½	5	11	6	0
15	5	7½	5	9	5	10½	5	11½	6	1½	6	2½	6	4	6	5½
16	6	0	6	1½	6	3	6	4½	6	6	6	7½	6	9	6	10½
17	6	4½	6	5½	6	7½	6	9½	6	11	7	0½	7	2½	7	3½
18	6	9	6	10½	7	0½	7	2	7	3½	7	5½	7	7½	7	8½
19	7	1½	7	3½	7	5½	7	6½	7	8½	7	10½	8	0½	8	2
20	7	6	7	8	7	9½	7	11½	8	1½	8	3½	8	5½	8	9
21	7	10½	8	0½	8	2½	8	4½	8	6½	8	8½	8	10½	9	0½
22	8	3	8	5	8	7½	8	9	8	11½	9	1½	9	3½	9	5½
23	8	7½	8	9½	9	0	9	1½	9	4½	9	6½	9	8½	9	10½
24	9	0	9	2½	9	4½	9	6½	9	9	9	11½	10	1½	10	3½
25	9	4½	9	7	9	9½	9	11½	10	2	10	4	10	6½	10	9
26	9	9	9	11½	10	2	10	4½	10	6½	10	9	10	11½	11	2
27	10	1½	10	4½	10	6½	10	9	10	11½	11	2	11	4½	11	7½
28	10	6	10	8½	10	11½	11	1½	11	4½	11	7	11	9½	12	0½
29	10	10½	11	1½	11	4	11	6½	11	9½	12	0	12	3	12	5½
30	11	3	11	5½	11	8½	11	11½	12	2½	12	5	12	8	12	10½
31	11	7½	11	10½	12	1½	12	4	12	7½	12	10	13	1	13	3½
32	12	0	12	3	12	6	12	9	13	0	13	3	13	6	13	9
33	12	4½	12	7½	12	10½	13	1½	13	5	13	7½	13	11½	14	2½
34	12	9	13	0½	13	3½	13	6½	13	9½	14	0½	14	4½	14	7½
35	13	1½	13	5	13	8½	13	11½	14	2½	14	5½	14	9½	15	0½
36	13	6	13	9½	14	0	14	4	14	7½	14	10½	15	2½	15	5½
37	13	10½	14	2	14	5½	14	8½	15	0½	15	3½	15	7½	15	10½
38	14	3	14	6½	14	10½	15	1½	15	5½	15	8½	16	0½	16	3
39	14	7½	14	11½	15	3	15	6½	15	10½	16	1½	16	5½	16	9
40	15	0	15	3½	15	7½	15	11½	16	3	16	6½	16	10½	17	1½
41	15	4½	15	8½	16	0½	16	4	16	8	16	11½	17	3½	17	7½

THIRTY TWOS.

Ems.	24s.	24s6d	25s.	25s6d	26s.	26s6d	27s.	27s6d
	s. d	s. d	s. d	s. d	s. d.	s. d.	s. d.	s. d.
42	15 9	16 1	16 5	16 8½	17 0½	17 4½	17 8½	18 0½
43	16 1½	16 5½	16 9½	17 1½	17 5½	17 9½	18 1½	18 5½
44	16 6	16 10½	17 2½	17 6½	17 10½	18 2½	18 6½	18 10½
45	16 10½	17 2½	17 7	17 11	18 3½	18 7½	19 0	19 4
46	17 3	17 7½	17 11½	18 3½	18 8½	19 0½	19 5	19 9½
47	17 7½	18 0	18 4½	18 8½	19 1½	19 5½	19 10	20 2½
48	18 0	18 4½	18 9	19 1½	19 6	19 10½	20 3	20 7½
49	18 4½	18 9½	19 1½	19 6½	19 11	20 3½	20 8½	21 1
50	18 9	19 1½	19 6½	19 11	20 3½	20 8½	21 1½	21 7
51	19 1½	19 6½	19 11½	20 3½	20 8½	21 1½	21 6½	22 0½
52	19 6	19 11	20 3½	20 8½	21 1½	21 6½	21 11½	22 5½
53	19 10½	20 3½	20 8½	21 1½	21 6½	21 11½	22 4½	22 10½
54	20 3	20 8	21 1½	21 6	21 11½	22 4½	22 9½	23 3½
55	20 7½	21 0½	21 6	21 11	22 4½	22 9½	23 2½	23 8½
56	21 0	21 5½	21 10½	22 3½	22 9	23 2½	23 7½	24 2
57	21 4½	21 10	22 3½	22 8½	23 3	23 7	24 0½	24 7½
58	21 9	22 2½	22 8	23 1½	23 6½	24 0	24 5½	25 0½
59	22 1½	22 7½	23 0½	23 6	23 11½	24 5½	24 10½	25 5½
60	22 6	22 11½	23 5½	23 10½	24 4½	24 10	25 3½	25 10½
61	22 10½	23 4½	23 10	24 3½	24 9½	25 3	25 9	26 3½
62	23 3	23 8½	24 2½	24 8½	25 2½	25 8	26 2	26 8½
63	23 7½	24 1½	24 7½	25 1	25 7½	26 1	26 7	27 1
64	24 0	24 6	25 0	25 6	26 0	26 6	27 0	27 6

Ems.	28s.	28s6d	29s.	29s6d	30s.	30s6d	31s.	31s6d
	s. d.	s. d.	s. d	s. d.	s d	s d	s d	s d
1	5½	5½	5½	5½	5½	5½	5½	5½
2	10½	10½	10½	11	11½	11½	11½	11½
3	1 3½	1 4	1 4½	1 4½	1 5	1 5½	1 5½	1 5½
4	1 9	1 9½	1 9½	1 10	1 10½	1 10½	1 11½	1 11½
5	2 2½	2 2½	2 3½	2 3½	2 4½	2 4½	2 5	2 5½
6	2 7½	2 8½	2 8½	2 9	2 9½	2 10½	2 10½	2 11½
7	3 0½	3 1½	3 2	3 2½	3 3½	3 4	3 4½	3 5½
8	3 6	3 6½	3 7½	3 8½	3 9	3 9½	3 10½	3 11½
9	3 11½	4 0	4 1	4 1½	4 2½	4 3½	4 4½	4 5
10	4 4½	4 5½	4 6½	4 7½	4 8½	4 9½	4 10	4 11
11	4 9½	4 10½	4 11½	5 0½	5 2	5 3	5 3½	5 4½
12	5 3	5 4½	5 5½	5 6½	5 7½	5 8½	5 9½	5 11½
13	5 8½	5 9½	5 10½	5 11½	6 1½	6 2½	6 3½	6 5½

THIRTY TWOS.

No.	28s.	28s6d	29s.	29s6d	30s.	30s6d	31s.	31s6d
	s d	s d	s d	s d	s d	s d	s d	s d
14	6 1½	6 3	6 4	6 5½	6 6½	6 8	6 9½	6 11½
15	6 6½	6 8½	6 9½	6 10¾	7 0½	7 1½	7 3	7 5½
16	7 0	7 1½	7 3	7 4½	7 6	7 7½	7 9	7 10½
17	7 5½	7 8½	7 10	7 11½	8 1½	8 4½	8 6½	8 9
18	7 10½	8 0½	8 1½	8 3½	8 5½	8 7	8 8	8 10½
19	8 3½	8 5½	8 7½	8 9	8 11	9 0½	9 2½	9 3
20	8 5	8 11	9 0½	9 2½	9 4½	9 6½	9 8½	9 9½
21	9 2½	9 4½	9 6½	9 8	9 10½	10 0	10 2	10 3½
22	9 7½	9 9½	9 11½	10 1½	10 3½	10 5½	10 7½	10 9½
23	10 0½	10 3	10 5	10 7	10 9½	10 11½	11 1½	11 3½
24	10 5	10 8½	10 10½	11 0½	11 3	11 5½	11 7½	11 9½
25	10 11½	11 1½	11 4	11 6½	11 8½	11 11	12 1½	12 3½
26	11 4½	11 7	11 9½	11 11½	12 2½	12 4½	12 7	12 9½
27	11 9½	12 0½	12 2½	12 5½	12 8	12 10½	13 0½	13 3½
28	12 3	12 5½	12 8½	12 10½	13 1½	13 4	13 6½	13 9½
29	12 8½	12 11	13 1½	13 4½	13 7½	13 9½	14 0½	14 3
30	13 1½	13 4½	13 7	13 9½	14 0½	14 3½	14 6½	14 9
31	13 6½	13 9½	14 0½	14 3½	14 6½	14 9½	15 0	15 2½
32	14 0	14 3	14 6	14 9	15 0	15 3	15 6	15 9
33	14 5½	14 8½	14 11½	15 2½	15 5½	15 8½	15 11½	16 2½
34	14 10½	15 1½	15 4½	15 8	15 11½	16 2½	16 5½	16 8½
35	15 3½	15 7	15 10½	16 1½	16 5	16 8½	16 11½	17 2½
36	15 9	16 0½	16 3½	16 7	16 10½	17 1½	17 5½	17 8½
37	16 2½	16 5½	16 9½	17 0½	17 4½	17 7½	17 11½	18 2½
38	16 7½	16 11½	17 2½	17 6	17 9½	18 1½	18 5	18 8½
39	17 0½	17 4½	17 8	17 11½	18 3½	18 7	18 10½	19 2
40	17 6	17 9½	18 1½	18 5½	18 9	19 0½	19 4½	19 8½
41	17 11½	18 3	18 7	18 10½	19 2½	19 6½	19 10½	20 2
42	18 4½	18 8½	19 0½	19 4½	19 8½	20 0½	20 4	20 8
43	18 9½	19 1	19 5½	19 9½	20 2	20 6	20 9½	21 1½
44	19 3	19 7½	19 11½	20 3½	20 7½	20 11½	21 3½	21 7½
45	19 8½	20 0½	20 4½	20 8½	21 1½	21 5½	21 9½	22 1½
46	20 1½	20 6	20 10	21 2½	21 6½	21 11	22 3½	22 7½
47	20 6½	20 11½	21 3½	21 7½	22 0½	22 4½	22 9	23 1½
48	21 0	21 4½	21 9	22 1½	22 6	22 10½	23 3	23 7½
49	21 5½	21 9½	22 2½	22 7	22 11½	23 4½	23 8½	24 1½
50	21 10½	22 3½	22 7½	23 0½	23 5½	23 10	24 2½	24 7½
51	22 3½	22 8½	23 1½	23 6	23 11	24 3½	24 8½	25 1
52	22 9	23 2	23 6½	23 11½	24 4½	24 9½	25 2½	25 7
53	23 2½	23 7½	24 0½	24 5	24 10½	25 3	25 8	26 0½
54	23 7½	24 0½	24 5½	24 10½	25 3½	25 8½	26 1½	26 6½

THIRTY TWOS.

Sh.	28s.		28s6d		29s.		29s6d		30s.		30s6d		31s.		31s6d	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
55	24	0½	24	6	24	11	25	4	25	0½	26	2½	26	7½	27	0½
56	24	6	24	11½	25	4½	25	9½	26	3	26	8½	27	1½	27	6½
57	24	11½	25	4½	25	10	26	3½	26	8½	27	2	27	7½	28	0½
58	25	4½	25	10	26	3½	26	8½	27	2½	27	7½	28	1½	28	6½
59	25	0½	26	3½	26	8½	27	2½	27	8	28	1½	28	6½	29	0½
60	26	3	26	8½	27	2½	27	7½	28	1½	28	7	29	0½	29	6½
61	26	8½	27	2	27	7½	28	1½	28	7½	29	0½	29	6½	30	0
62	27	1½	27	7½	28	1	28	6½	29	0½	29	6½	30	0½	30	6
63	27	6½	28	0½	28	6½	29	0½	29	6½	30	0½	30	6	30	11½
64	28	0	28	6	29	0	29	6	30	0	30	6	31	0	31	6

Sh.	32s.		32s6d		33s.		33s6d		34s.		34s6d		35s.		35s6d	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
1		0		0		0		0½		0½		0½		0½		0½
2	1	0	1	0½	1	0½	1	0½	1	0½	1	0½	1	1	1	1½
3	1	6	1	6½	1	6½	1	6½	1	7	1	7½	1	7½	1	7½
4	2	0	2	0½	2	0½	2	1	2	1½	2	1½	2	2½	2	2½
5	2	6	2	6½	2	6½	2	7½	2	7½	2	8½	2	8½	2	9
6	3	0	3	0½	3	1	3	1½	3	2½	3	2½	3	3½	3	3½
7	3	6	3	6½	3	7	3	7½	3	8½	3	9½	3	9½	3	10½
8	4	0	4	0½	4	1½	4	2½	4	3	4	3½	4	4½	4	5½
9	4	6	4	6½	4	7½	4	8½	4	9½	4	10½	4	11	4	11½
10	5	0	5	0½	5	1½	5	2½	5	3½	5	4½	5	5½	5	6½
11	5	6	5	6½	5	7½	5	9	5	9½	5	10	6	0	6	1
12	6	0	6	1	6	2½	6	3½	6	4½	6	5½	6	6½	6	7½
13	6	6	6	7	6	8½	6	9½	6	10½	6	11	7	1	7	2
14	7	0	7	1½	7	2½	7	3½	7	5½	7	6½	7	7½	7	9
15	7	6	7	7½	7	8½	7	10	7	11½	8	0½	8	2½	8	3½
16	8	0	8	1½	8	3	8	4½	8	6	8	7½	8	9	8	10½
17	8	6	8	7½	8	9	8	10½	9	0½	9	1	9	3½	9	4½
18	9	0	9	1½	9	3½	9	5	9	6½	9	8½	9	10	9	11½
19	9	6	9	7½	9	9½	9	11½	10	1	10	2½	10	4½	10	7½
20	10	0	10	1½	10	3½	10	5½	10	7½	10	9½	10	11½	11	1
21	10	6	10	7½	10	9½	10	11½	11	1½	11	3½	11	5½	11	7½
22	11	0	11	2	11	4	11	6	11	8½	11	10½	12	0½	12	2½
23	11	6	11	8	11	10	12	0½	12	2½	12	4½	12	6½	12	8½
24	12	0	12	2½	12	4½	12	6½	12	9	12	11½	13	1½	13	3½
25	12	0	12	8½	12	0½	13	1	13	3½	13	5½	13	8	13	9½
26	13	0	13	2½	13	4½	13	7½	13	9½	14	0	14	2½	14	5·

THIRTY TWOS.

Yard	32s.	32s6d	33s.	33s6d	34s.	34s6d	35s.	35s6d
	s d	s d	s d	s d	s d	s d	s d	s d
27	13 6	13 8½	13 10½	14 1½	14 4	14 6½	14 9	14 11½
28	14 0	14 2½	14 5½	14 7½	14 10½	15 1	15 3½	15 6½
29	14 6	14 8½	14 11½	15 2	15 4½	15 7½	15 10½	16 0½
30	15 0	15 2½	15 5½	15 8½	15 11½	16 2	16 4½	16 7½
31	15 6	15 8½	15 11½	16 2½	16 5½	16 8½	16 11½	17 2
32	16 0	16 3	16 6	16 9	17 0	17 3	17 6	17 9
33	16 6	16 9	17 0	17 3½	17 6½	17 9½	18 0½	18 3½
34	17 0	17 3	17 6½	17 9½	18 0½	18 3½	18 7	18 10½
35	17 6	17 9	18 0½	18 3½	18 7	18 9½	19 1½	19 4½
36	18 0	18 3½	18 6½	18 10	19 1½	19 4½	19 8½	19 11½
37	18 6	18 9½	19 0½	19 4½	19 7½	19 11½	20 2½	20 6
38	19 0	19 3½	19 7	19 10½	20 2½	20 5½	20 9½	21 0½
39	19 6	19 9½	20 1	20 4½	20 8½	20 11½	21 3½	21 7½
40	20 0	20 3½	20 7½	20 11½	21 3	21 6½	21 10½	22 2
41	20 6	20 9½	21 1½	21 5½	21 9½	22 0½	22 4½	22 8½
42	21 0	21 3½	21 7½	21 11½	22 3½	22 7½	22 11½	23 3½
43	21 6	21 9½	22 1½	22 6	22 10	23 2	23 6	23 10
44	22 0	22 4	22 8½	23 0½	23 4½	23 8½	24 0½	24 4½
45	22 6	22 10	23 2½	23 6½	23 10½	24 3	24 7½	24 11½
46	23 0	23 4½	23 8½	24 0½	24 5½	24 9½	25 1½	25 6
47	23 6	23 10½	24 2½	24 7	24 11½	25 4	25 8½	26 0
48	24 0	24 4½	24 9	25 1½	25 6	25 10½	26 3	26 7½
49	24 6	24 10½	25 3	25 7½	26 0½	26 5	26 9½	27 2
50	25 0	25 4½	25 9½	26 2	26 6½	26 11½	27 4	27 8½
51	25 6	25 10½	26 3½	26 8½	27 1	27 5½	27 10½	28 3½
52	26 0	26 4½	26 9½	27 2½	27 7½	28 0½	28 6½	28 10
53	26 6	26 10½	27 3½	27 8½	28 1½	28 6½	28 11½	29 4½
54	27 0	27 5	27 10	28 3	28 8½	29 1½	29 6½	29 11½
55	27 6	27 11	28 4	28 9½	29 2½	29 7½	30 0½	30 5½
56	28 0	28 5½	28 10½	29 3½	29 9	30 2½	30 7½	31 0½
57	28 6	28 11½	29 4½	29 10	30 3½	30 8½	31 2	31 7½
58	29 0	29 5½	29 10½	30 4½	30 9½	31 3	31 8½	32 2
59	29 6	29 11½	30 4½	30 10½	31 4	31 9½	32 3	32 8½
60	30 0	30 5½	30 11½	31 4½	31 10½	32 3	32 9½	33 3½
61	30 6	30 11½	31 5½	31 10	32 4½	32 10½	33 4½	33 9½
62	31 0	31 5½	31 11½	32 5½	32 11½	33 5	33 10½	34 4½
63	31 6	31 11½	32 5½	32 11½	33 5½	33 11½	34 5½	34 11
64	32 0	32 6	33 0	33 6	34 0	34 6	35 0	35 6

THIRTY-TWOS.

Sh.	36s.	36s6d	37s.	37s6d	38s.	38s6d	39s.	39s6d
	s d	s d	s d	s d	s d	s d	s d	s d
1	0 3	0 3	0 3	0 7	0 7	0 7	0 7	0 7
2	1 1	1 1	1 1	1 2	1 2	1 2	1 2	1 2
3	1 8	1 8	1 8	1 9	1 9	1 9	1 9	1 10
4	2 3	2 3	2 3	2 4	2 4	2 4	2 5	2 5
5	2 9	2 10	2 10	2 11	2 11	2 11	3 0	3 0
6	3 4	3 5	3 5	3 6	3 6	3 7	3 7	3 8
7	3 11	3 11	4 0	4 1	4 1	4 2	4 2	4 3
8	4 6	4 6	4 7	4 8	4 8	4 9	4 10	4 11
9	5 0	5 1	5 2	5 3	5 4	5 4	5 5	5 6
10	5 7	5 8	5 9	5 10	5 11	6 0	6 1	6 2
11	6 2	6 3	6 4	6 5	6 6	6 7	6 8	6 9
12	6 9	6 10	6 11	7 0	7 1	7 2	7 3	7 4
13	7 3	7 4	7 6	7 7	7 8	7 9	7 11	8 0
14	7 10	7 11	8 1	8 2	8 3	8 5	8 6	8 7
15	8 5	8 6	8 7	8 9	8 11	9 0	9 1	9 2
16	9 0	9 1	9 3	9 4	9 6	9 7	9 9	9 10
17	9 6	9 8	9 9	9 11	10 1	10 2	10 4	10 5
18	10 1	10 3	10 4	10 6	10 8	10 9	10 11	11 1
19	10 8	10 10	10 11	11 1	11 3	11 4	11 6	11 8
20	11 3	11 4	11 6	11 8	11 10	12 0	12 2	12 4
21	11 9	11 11	12 1	12 3	12 5	12 7	12 9	12 11
22	12 4	12 6	12 8	12 10	13 0	13 2	13 4	13 6
23	12 11	13 1	13 3	13 5	13 7	13 9	14 0	14 1
24	13 6	13 8	13 10	14 0	14 3	14 5	14 7	14 9
25	14 0	14 3	14 5	14 7	14 10	15 0	15 2	15 5
26	14 7	14 9	15 0	15 2	15 5	15 7	15 10	16 0
27	15 2	15 4	15 7	15 9	16 0	16 2	16 5	16 7
28	15 9	15 11	16 2	16 4	16 7	16 10	17 0	17 3
29	16 3	16 6	16 9	16 11	17 2	17 5	17 8	17 10
30	16 10	17 1	17 4	17 6	17 9	18 0	18 3	18 6
31	17 5	17 8	17 10	18 1	18 4	18 7	18 10	19 1
32	18 0	18 3	18 6	18 9	19 0	19 3	19 6	19 9
33	18 6	18 9	19 0	19 4	19 7	19 10	20 1	20 4
34	19 1	19 4	19 7	19 11	20 2	20 5	20 8	20 11
35	19 8	19 11	20 2	20 6	20 9	21 0	21 3	21 7
36	20 3	20 6	20 9	21 1	21 4	21 7	21 11	22 2
37	20 9	21 1	21 4	21 7	21 11	22 2	22 6	22 9
38	21 4	21 8	21 10	22 3	22 6	22 10	23 1	23 5
39	21 11	22 2	22 5	22 10	23 1	23 5	23 9	24 0
40	22 6	22 9	23 1	23 5	23 9	24 0	24 4	24 8
41	23 0	23 4	23 8	24 0	24 4	24 7	24 11	25 3

THIRTY TWOS.

Pg.	36s.		36s6d		37s.		37s6d		38s.		38s6d		39s.		39s6d	
s	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
42	23	7½	23	11¼	24	3¼	24	7¼	24	11¼	25	3	25	7	25	11
43	24	2¼	24	6	24	10	25	2¼	25	6¼	25	10	26	2¼	26	6¼
44	24	9	25	1	25	5¼	25	9¼	26	1½	26	5½	26	9¾	27	1¾
45	25	3¾	25	7¾	26	0	26	4¼	26	8½	27	0½	27	5	27	9
46	25	10¾	26	2¼	26	7	26	11¼	27	3¾	27	8	28	0¼	28	4½
47	26	5¼	26	9½	27	1¼	27	6¼	28	10¾	28	3	28	7½	28	11¾
48	27	0	27	4½	27	9	28	1½	28	6	28	10½	29	3	29	7½
49	27	6¾	27	11¼	28	3¾	28	8½	29	1	29	5½	29	10¼	30	2¾
50	28	1½	28	6	28	10¾	29	3½	29	8¼	30	0¾	30	5¾	30	10¼
51	28	8¼	29	0¾	29	5½	29	10½	30	3¼	30	7¾	31	1	31	5½
52	29	3	29	7¾	30	0¾	30	5½	30	10½	31	3¼	31	8¼	32	1
53	29	9¾	30	2½	30	7½	31	0½	31	5½	31	10¼	32	3½	32	7¼
54	30	4½	30	9½	31	2½	31	7½	32	0¾	32	5¾	32	10¾	33	4¾
55	30	11¼	31	4¼	31	9¼	32	2½	32	7¾	33	0¾	33	6	33	11
56	31	6	31	11¼	32	4½	32	9¾	33	3	33	8¼	34	1½	34	6¾
57	32	0¾	32	6	32	11¼	33	4¾	33	10	34	3¼	34	9	35	2
58	32	7¼	33	0¾	33	6¼	33	11¾	34	5¼	34	10½	31	4	35	9¼
59	33	2¼	33	7½	34	1	34	6¾	35	0¼	35	5½	35	11¼	36	5¾
60	33	9	34	2½	34	8¼	35	1¾	35	7½	36	1	36	6¾	37	0½
61	34	3¾	34	9¼	35	3	35	8¾	36	2¾	36	8	37	2	37	7¾
62	34	10½	35	4¼	35	10	36	3¾	36	9	37	3½	37	9¼	38	3
63	35	5¼	35	11	36	4¾	36	10¾	37	4½	37	10½	38	4½	38	10¼
64	36	0	36	6	37	0	37	6	38	0	38	6	39	0	39	6

Pg.	40s.		40s6d		41s.		41s6d		2s.		42s6d		43s.		43s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1		7½		7½		7½		7¾		7¾		7¾		8		8
2	1	3	1	3	1	3¼	1	3½	1	3½	1	3¾	1	4	1	4¼
3	1	10½	1	10¾	1	11	1	11¼	1	11½	1	11½	2	0	2	0¼
4	2	6	2	6¼	2	6¾	2	7	2	7½	2	7¾	2	8¼	2	8½
5	3	1½	3	1¾	3	2¼	3	2¾	3	3½	3	3½	3	4¼	3	4½
6	3	9	3	9½	3	10¼	3	10½	3	11¼	3	11¾	4	0¼	4	0¾
7	4	4½	4	5	4	5½	4	6¼	4	7	4	7½	4	8¼	4	8¾
8	5	0	5	0¾	5	1½	5	2¼	5	3	5	3¾	5	4½	5	5¼
9	5	7½	5	8¼	5	9	5	10	5	10¾	5	11½	6	0½	6	1¼
10	6	3	6	3¾	6	4¾	6	5¾	6	6¾	6	7½	6	8½	6	9½
11	6	10½	6	11¼	7	0¼	7	1½	7	2½	7	3¼	7	4½	7	5½
12	7	6	7	7	7	8¼	7	9¼	7	10½	[illegible]	11½	8	0¼	8	1¾
13	8	1½	8	2¼	8	3¼	8	4½	8	6¼	8	7¼	8	8¾	8	9¾

THIRTY TWOS.

Sts.	40s.		40s6d		41s.		41s6d		42s.		42s6d		43s.		43s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
14	8	9	8	10½	8	11½	9	0½	9	2½	9	8½	9	4½	9	8
15	9	4½	9	5½	9	7	9	8½	9	10	9	11½	10	0½	10	2
16	10	0	10	1½	10	3	10	4½	10	6	10	7½	10	9	10	10½
17	10	7½	10	9	10	10½	11	0½	11	1½	11	3½	11	5½	11	6½
18	11	3	11	4½	11	6½	11	8	11	9½	11	11½	12	1	12	2½
19	11	10½	12	0	12	1½	12	3½	12	5½	12	7	12	9	12	10½
20	12	6	12	7½	12	9½	12	11½	13	1½	13	3½	13	5½	13	7
21	13	1½	13	3½	13	5½	13	7½	13	9½	13	11	14	1½	14	3
22	13	9	13	11	14	1	14	3	14	5½	14	7½	14	9½	14	11½
23	14	4½	14	6½	14	8½	14	10½	15	1	15	3	15	5½	15	7½
24	15	0	15	2½	15	4½	15	6½	15	9	15	11½	16	1½	16	3½
25	15	7½	15	9½	16	0	16	2½	16	4½	16	7	16	9½	16	11½
26	16	3	16	5½	16	7½	16	10	17	0½	17	3½	17	5½	17	8
27	16	10½	17	0½	17	3½	17	5½	17	8½	17	11	18	1½	18	4
28	17	6	17	8½	17	11½	18	1½	18	4½	18	7	18	9½	19	0½
29	18	1½	18	4	18	7½	18	9½	19	0½	19	2½	19	5½	19	8½
30	18	9	18	11½	19	2½	19	5½	19	8½	19	11	20	1½	20	4½
31	19	4½	19	7½	19	10	20	1	20	4	20	6½	20	9½	21	0½
32	20	0	20	3	20	6	20	9	21	0	21	3	21	6	21	9
33	20	7½	20	10½	21	1½	21	4½	21	7½	21	10½	22	2	22	5½
34	21	3	21	6	21	9½	22	0½	22	3½	22	6½	22	10	23	1½
35	21	10½	22	1½	22	4½	22	8½	22	11½	23	2½	23	6	23	9½
36	22	6	22	9½	23	0½	23	4	23	7½	23	10½	24	2½	24	6½
37	22	1½	23	4½	23	8½	23	11½	24	3½	24	6½	24	10½	25	2½
38	23	0	24	0½	24	4	24	7½	24	11½	25	2½	25	6½	25	10½
39	24	4½	24	8	24	11½	25	3½	25	7	25	10½	26	2½	26	6½
40	25	0	25	3½	25	7½	25	11½	26	3	26	6½	26	10½	27	3½
41	25	7½	25	10½	26	3	26	7	26	10½	27	2½	27	6½	27	11½
42	26	3	26	6½	26	10½	27	2½	27	6½	27	10½	28	2½	28	7½
43	26	10½	27	2½	27	6½	27	10½	28	2½	28	6½	28	10½	29	3
44	27	6	27	10	28	2½	28	6½	28	10½	29	2½	29	6½	29	11½
45	28	1½	28	5½	28	9½	29	2	29	6½	29	10½	30	2½	30	7½
46	28	9	29	1½	29	5½	29	9½	30	2½	30	6½	30	10½	31	4
47	29	4½	29	8½	30	1	30	5½	30	10	31	2½	31	6½	31	11
48	30	0	30	4½	30	9	31	1½	31	6	31	10½	32	3	32	7½
49	30	7½	31	0	31	5½	31	9½	32	1½	32	6½	32	11	33	3½
50	31	3	31	7½	32	0½	32	5	32	9½	33	2½	33	7	33	11½
51	31	10½	32	3	32	7½	33	0½	33	5½	33	10	34	3	34	7½
52	32	6	32	10½	33	3½	33	8	34	1½	34	6½	34	11½	35	4
53	33	1½	33	6½	33	11½	34	3½	34	9½	35	2	35	7½	36	0
54	33	9	34	2	34	7	35	0	35	5½	35	10½	36	3½	36	8½

THIRTY TWOS.

Pa	40s.	40s6d	41s.	41s6d	42s.	42s6d	43s.	43s6d
	s d	s d	s d	s d	s d	s d	s d	s d
55	34 4½	34 9½	35 2½	35 7½	36 1	36 6½	36 11½	37 4½
56	35 0	35 5½	35 10½	36 3½	36 9	37 2½	37 7½	38 0½
57	35 7½	36 0½	36 6	36 11½	37 4½	37 10	38 3½	38 8½
58	36 3	36 8½	37 1½	37 7½	38 0½	38 6	38 11½	39 5
59	36 10½	37 4	37 9½	38 3	38 8½	39 2	39 7½	40 1
60	37 6	37 11½	38 5½	38 10½	39 4½	39 10	40 3½	40 9½
61	38 1½	38 7	39 0½	39 6½	40 0½	40 6	40 11½	41 5½
62	38 9	39 2½	39 8½	40 2½	40 8½	41 2	41 7½	42 1½
63	39 4½	39 10½	40 4½	40 10	41 4	41 10	42 3½	42 9½
64	40 0	40 6	41 0	41 6	42 0	42 6	43 0	43 6

Pa	44s.	44s6d	45s.	45s6d	46s.	46s6d	47s.	47s6d
	s d	s. d.	s d	s d	s d	s d	s d	s d
1	8½	8½	8½	8½	8½	8½	8½	8½
2	1 4½	1 4½	1 4½	1 5	1 5½	1 5½	1 5½	1 5½
3	2 0½	2 1	2 1½	2 1½	2 1½	2 2	2 2½	2 2½
4	2 9	2 9½	2 9½	2 10	2 10½	2 10½	2 11½	2 12½
5	3 5½	3 5½	3 6	3 6½	3 7	3 7½	3 8	3 8½
6	4 1½	4 2	4 2½	4 3	4 3½	4 4½	4 4½	4 5½
7	4 9½	4 10½	4 11	4 11½	5 0½	5 1	5 1½	5 2½
8	5 6	5 6½	5 7½	5 8½	5 9	5 9½	5 10½	5 11½
9	6 2½	6 3	6 3½	6 4½	6 5½	6 6½	6 7½	6 8
10	6 10½	6 11½	7 0½	7 1½	7 2½	7 3	7 4	7 5
11	7 6½	7 8½	7 8½	7 9½	7 10½	7 11½	8 0½	8 1½
12	8 3	8 4	8 5½	8 6½	8 7½	8 8½	8 9½	8 10½
13	8 11½	9 0½	9 1½	9 2½	9 3	9 4	9 5½	9 6½	9 7½
14	9 7½	9 8½	9 10	9 11½	10 0½	10 2	10 3½	10 4½
15	10 3½	10 5	10 6½	10 7½	10 9½	10 10½	11 0	11 1½
16	11 0	11 1½	11 3	11 4½	11 6	11 7½	11 9	11 10½
17	11 8½	11 9½	11 11½	12 1	12 2½	12 4	12 5½	12 7½
18	12 4½	12 6	12 7½	12 9½	12 11½	13 0½	13 2½	13 4½
19	13 0½	13 2½	13 4½	13 6	13 7½	13 9½	13 11½	14 1
20	13 9	13 10½	14 0½	14 2½	14 4½	14 6½	14 8½	14 10
21	14 5½	14 7	14 9	14 10½	14 12½	15 3	15 5	15 7
22	15 1½	15 3½	15 5½	15 7½	15 9½	15 11½	16 1½	16 3½
23	15 9½	16 1½	16 2	16 4	16 6½	16 8½	16 10½	17 0½
24	16 6	16 8½	16 10½	17 0½	17 3	17 5½	17 7½	17 9½
25	17 2½	17 4½	17 6½	17 9½	17 11½	18 1½	18 4½	18 6½
26	17 10½	18 0½	18 3½	18 5½	18 8½	18 10½	19 1	19 3½

THIRTY TWOS.

Pica	44s.		44s6d		45s.		45s6d		46s.		46s6d		47s.		47s6d	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
27	18	6½	18	9½	18	11½	19	2½	19	4½	19	7½	19	9½	20	0½
28	19	3	19	5½	19	8½	19	10½	20	1½	20	4	20	6½	20	9½
29	19	11½	20	1½	20	4½	20	7½	20	10	21	0½	21	3½	21	6½
30	20	7½	20	10½	21	1	21	3½	21	6½	21	9½	22	0½	22	3
31	21	3½	21	6½	21	9½	22	0½	22	3½	22	6½	22	9	23	0
32	22	0	22	3½	22	6	22	9	23	0	23	3	23	6	23	9
33	22	8½	22	11½	23	2½	23	5½	23	8½	23	11½	24	2½	24	5½
34	23	4½	23	7½	23	10½	24	2	24	5½	24	8½	24	11½	25	2½
35	24	0½	24	4	24	7½	24	10½	25	1½	25	5	25	8½	25	11½
36	24	9	25	0½	25	3½	25	7	25	10½	26	1½	26	5½	26	8½
37	25	5½	25	8½	26	0	26	3½	26	7	26	10½	27	2	27	5½
38	26	1½	26	5	26	8½	27	0	27	3½	27	7½	27	10½	28	2½
39	26	9½	27	1½	27	5	27	8½	28	0½	28	4	28	7½	28	11½
40	27	6	27	9½	28	1½	28	5½	28	9	29	0½	29	4½	29	8½
41	28	2½	28	6	28	9½	29	1½	29	5½	29	9½	30	1½	30	5
42	28	10½	29	2½	29	6½	29	10½	30	2½	30	6	30	10	31	2
43	29	6½	29	10½	30	2½	30	6½	30	10½	31	2½	31	6½	31	10½
44	30	3	30	7	30	11½	31	3½	31	7½	31	11½	32	3½	32	7½
45	30	11½	31	3½	31	7½	31	11½	32	4	32	8½	33	0½	33	4½
46	31	7½	31	11½	32	4	32	8½	33	0½	33	5	33	9½	34	1½
47	32	3½	32	8	33	0½	33	4½	33	9½	34	1½	34	6	34	10½
48	33	0	33	4½	33	9	34	1½	34	6	34	10½	35	3	35	7½
49	33	8½	34	0½	34	5½	34	10	35	2½	35	7	35	11½	36	4½
50	34	4½	34	9	35	1½	35	6½	35	11½	36	3½	36	8½	37	1½
51	35	0½	35	5½	35	10½	36	3	36	7½	37	0½	37	5½	37	10
52	35	9	36	1½	36	6½	36	11½	37	4½	37	9½	38	2½	38	7
53	36	5½	36	10	37	3	37	8	38	1	38	6	38	11	39	4
54	37	1½	37	6½	37	11½	38	4½	38	9½	39	2½	39	7½	40	0½
55	37	9½	38	2½	38	8	39	1	39	6½	39	11½	40	4½	40	9½
56	38	6	38	11½	39	4½	39	9½	40	3	40	8½	41	1½	41	6½
57	39	2½	39	7½	40	0½	40	6½	40	11½	41	4½	41	10½	42	3½
58	39	10½	40	3½	40	9½	41	2½	41	8½	42	1½	42	7	43	0½
59	40	6½	41	0½	41	5½	41	11½	42	4½	42	10½	43	3½	43	9½
60	41	3	41	8½	42	2½	42	7½	43	1½	43	7	44	0½	44	6½
61	41	11½	42	4½	42	10½	43	4½	43	10	44	3½	44	9½	45	3½
62	42	7½	43	1½	43	7	44	0½	44	6½	45	0½	45	6½	46	0
63	43	3½	43	9½	44	3½	45	0½	45	3½	45	9½	46	3½	46	9
64	44	0	44	6	45	0	45	6	46	0	46	6	47	0	47	6

THIRTY TWOS.

Sheet	48s.	48s6d	49s.	49s6d	50s.	50s6d	51s.	51s6d
	s d	s d	s d	s d	s d	s d	s d	s d
1	9	9	9	9½	9½	9½	9½	9½
2	1 6	1 6	1 6½	1 6½	1 6½	1 6½	1 7	1 7½
3	2 3	2 3½	2 3½	2 3½	2 4	2 4½	2 4½	2 4½
4	3 0	3 0½	3 0½	3 1	3 1½	3 1½	3 2½	3 2½
5	3 9	3 9½	3 9½	3 10½	3 10½	3 11½	3 11½	4 0½
6	4 6	4 6½	4 7	4 7½	4 8½	4 8½	4 9½	4 9½
7	5 3	5 3½	5 4½	5 4½	5 5½	5 6½	5 6½	5 7½
8	6 0	6 0½	6 1½	6 2½	6 3	6 3½	6 4½	6 5½
9	6 9	6 9½	6 10½	6 11½	7 0½	7 1	7 2	7 2½
10	7 6	7 6½	7 7½	7 8½	7 9½	7 10½	7 11½	8 0½
11	8 3	8 4	8 5	8 6	8 7	8 8	8 9	8 10
12	9 0	9 1	9 2½	9 3½	9 4½	9 5½	9 6½	9 7½
13	9 9	9 10	9 11½	10 0½	10 1½	10 3	10 4½	10 5½
14	10 6	10 7½	10 8½	10 9½	10 11½	11 0½	11 1½	11 2
15	11 3	11 4½	11 5½	11 7	11 8½	11 10	11 11½	12 0½
16	12 0	12 1½	12 3	12 4½	12 6	12 7½	12 9	12 10½
17	12 9	12 10½	13 0	13 1½	13 3½	13 4½	13 6½	13 8
18	13 6	13 7½	13 9½	13 11	14 0½	14 2½	14 4	14 5½
19	14 3	14 4½	14 6½	14 8½	14 10	14 11½	15 1½	15 3½
20	15 0	15 1½	15 3½	15 5½	15 7½	15 9½	15 11½	16 1
21	15 9	15 10½	16 0½	16 2½	16 4½	16 6½	16 8½	16 10½
22	16 6	16 8	16 10	17 0	17 2½	17 4½	17 6½	17 8½
23	17 3	17 5	17 7½	17 9½	17 11½	18 1½	18 3½	18 6
24	18 0	18 2½	18 4½	18 6½	18 9	18 11½	19 1½	19 3½
25	18 9	18 11½	19 1½	19 4	19 6½	19 8½	19 11	20 1½
26	19 6	19 8½	19 10½	20 1½	20 3½	20 6	20 8½	20 11
27	20 3	20 5½	20 8	20 10½	21 1	21 3½	21 6	21 8½
28	21 0	21 2½	21 5½	21 7½	21 10½	22 1	22 3½	22 6½
29	21 9	21 11½	22 2½	22 5	22 7½	22 11½	23 1	23 4
30	22 6	22 8½	22 11½	23 2½	23 5½	23 8	23 10½	24 1½
31	23 3	23 5½	23 8½	23 11½	24 2½	24 5½	24 8½	24 11½
32	24 0	24 3	24 6	24 9	25 0	25 3	25 6	25 9
33	24 9	25 0	25 3	25 6½	25 9½	26 0½	26 3½	26 6½
34	25 6	25 9	26 0½	26 3½	26 6½	26 9½	27 1	27 4½
35	26 3	26 6½	26 9½	27 0½	27 4	27 7½	27 10½	28 2½
36	27 0	27 3½	27 6½	27 10	28 1½	28 4½	28 8½	28 11½
37	27 9	28 0½	28 3½	28 7½	28 10½	29 2½	29 5½	29 8½
38	28 6	28 9½	29 1	29 4½	29 8½	29 11½	30 3½	30 6½
39	29 3	29 6½	29 10½	30 1½	30 5½	30 9½	31 0½	31 4½
40	30 0	30 3½	30 7½	30 11½	31 3	31 6½	31 10½	32 2½
41	30 9	31 0½	31 4½	31 8½	32 0½	32 4	32 8	32 11½

THIRTY TWOS.

Yds	48s.		48s6d		49s.		49s6d		50s.		50s6d		51s.		51s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
42	31	6	31	9½	32	1½	32	5½	32	9½	33	1½	33	5½	33	9½
43	32	3	32	7	32	11	33	2	33	7	33	10½	34	3	34	7
44	33	0	33	4	33	8½	34	0½	34	4½	34	8½	35	0½	35	4½
45	33	9	34	1	34	5½	34	9½	35	1½	35	6	36	10½	36	2½
46	34	6	34	10½	35	2½	35	6½	35	11½	36	3½	36	7½	37	0
47	35	3	35	7½	35	11½	36	4	36	8½	37	1	37	5½	38	9½
48	36	0	36	4½	36	9	37	1½	37	6	37	10½	38	3	38	7½
49	36	9	37	1½	37	6	37	10½	38	3½	38	7½	39	0½	39	5
50	37	6	37	10½	38	3½	38	8	39	0½	39	5½	39	10	40	2½
51	38	3	38	7½	39	0½	39	5½	39	10	40	3½	40	7½	41	0½
52	39	0	39	4½	39	9½	40	2½	40	7½	41	1½	41	5½	41	10
53	39	9	40	1½	40	6½	40	11½	41	4½	42	11½	42	2½	42	7½
54	40	6	40	11	41	4	41	9	42	2½	42	6½	43	0½	43	5½
55	41	3	41	8	42	1½	42	6½	42	11½	43	3½	43	9½	44	3
56	42	0	42	5½	42	10½	43	3½	43	9	44	2½	44	7½	45	0½
57	42	9	43	2½	43	7½	44	1	44	6½	44	11½	45	5½	45	10½
58	43	6	43	11½	44	4½	44	10½	45	3½	45	9	46	2½	46	8
59	44	3	44	8½	45	2	45	7½	46	1	46	6½	47	0	47	5½
60	45	0	45	5½	45	11½	46	4½	46	10½	47	4	47	9½	48	3½
61	45	9	46	2½	46	8½	47	2	47	7½	48	1½	48	7½	49	1
62	46	6	46	11½	47	5½	47	11½	48	5½	48	11	49	4½	49	10½
63	47	3	47	8½	48	2½	48	8½	49	2½	49	8½	50	2½	50	8½
64	48	0	48	6	49	0	49	6	50	0	50	6	51	0	51	6

Yds	52s.		52s6d		53s.		53s6d		54s.		54s6d		55s.		55s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1		0½		9½		9½		10		10		10		10½		10½
2	1	7½	1	7½	1	7½	1	8	1	8½	1	8½	1	8½	1	8½
3	2	5½	2	5½	2	5½	2	6	2	6½	2	6½	2	6½	2	7
4	3	3	3	3½	3	3½	3	4	3	4½	3	4½	3	5½	3	5½
5	4	0½	4	1½	4	1½	4	2	4	2½	4	3	4	3½	4	4
6	4	10½	4	11	4	11½	5	0	5	0½	5	1½	5	1½	5	2½
7	5	8½	5	8½	5	9	5	10	5	10½	5	11½	6	0	6	0½
8	6	6	6	6½	6	7½	6	8½	6	9	6	9½	6	10½	6	11½
9	7	3½	7	4½	7	5½	7	6½	7	7	7	7½	7	8½	7	9½
10	8	1½	8	2½	8	3½	8	4½	8	5½	8	6	8	7	8	8
11	8	11½	9	0½	9	1½	9	2½	9	3½	9	4½	9	5½	9	6½
12	9	9	9	10	9	11½	10	0½	10	1½	10	2½	10	3½	10	4½
13	10	6½	10	7½	10	9	10	10½	10	11½	11	0½	11	2	11	3½

THIRTY TWOS.

Pull	52s.		52s6d		53s.		52s6d		54s.		54s6d		55s.		55s6d	
	s.	d	s.	d.	s.	d	s.	d.	s.	d	s.	d	s.	d	s.	d
14	11	4½	11	5½	11	7	11	8½	11	9½	11	11	12	0½	12	1½
15	12	2½	12	3½	12	5	12	6½	12	7½	12	9½	12	10½	13	0
16	13	0	13	1½	13	3	13	4½	13	6	13	7½	13	9	13	10½
17	13	9½	13	11½	14	0½	14	2½	14	4	14	5½	14	7½	14	8½
18	14	7½	14	9	14	10½	15	0½	15	2½	15	3½	15	5½	15	7½
19	15	5½	15	7	15	8½	15	10½	16	0½	16	2	16	3½	16	5½
20	16	3	16	4½	16	6½	16	8½	16	10½	17	0½	17	2½	17	4
21	17	0½	17	2½	17	4½	17	6½	17	8½	17	10½	18	0½	18	2½
22	17	10½	18	0½	18	2½	18	4½	18	6½	18	8½	18	10½	19	0½
23	18	8½	18	10½	19	0½	19	2½	19	4½	19	7	19	9	19	10½
24	19	6	19	8½	19	10½	20	0½	20	3	20	5½	20	7½	20	9½
25	20	3½	20	6	20	8½	20	10½	21	1	21	3½	21	5½	21	8
26	21	1½	21	3½	21	6½	21	8½	21	11½	22	1½	22	4	22	6½
27	21	11½	22	1½	22	4½	22	6½	22	9½	22	11½	23	2½	23	4½
28	22	0	22	11½	23	2½	23	4½	23	7½	23	10	24	0½	24	3½
29	23	0½	23	9½	24	0	24	2½	24	5½	24	8½	24	11	25	1½
30	24	4½	24	7½	24	10	25	0½	25	3½	25	6½	25	9½	26	0
31	25	2½	25	5	25	8	25	10½	26	1½	26	4½	26	7½	26	10½
32	26	0	26	3	26	6	26	9	27	0	27	3	27	6	27	9
33	26	9½	27	0½	27	3½	27	7	27	10	28	1	28	4½	28	7½
34	27	7½	27	10½	28	1½	28	5	28	8½	28	11½	29	2½	29	5½
35	28	5½	28	8½	28	11½	29	3	29	6½	29	9½	30	0½	30	4
36	29	3	29	6½	29	9½	30	1	30	4½	30	7½	30	11½	31	2½
37	30	0½	30	4	30	7½	30	11	31	2½	31	6	31	9½	32	1
38	30	10½	31	2	31	5½	31	9	32	0½	32	4½	32	7½	32	11½
39	31	8½	31	11½	32	3½	32	7	32	10½	33	2½	33	6	33	0½
40	32	6	32	9½	33	1½	33	5½	33	9	34	0½	34	4½	34	8½
41	33	3½	33	7½	33	11½	34	3½	34	7	34	10½	35	2½	35	6½
42	34	1½	34	5½	34	9½	35	1½	35	5½	35	9	36	1	36	5
43	34	11½	35	3½	35	7½	35	11½	36	3½	36	7½	36	11½	37	3½
44	35	9	36	1	36	5½	36	9½	37	1½	37	5½	37	9½	38	1½
45	36	6½	36	10½	37	3	37	7½	37	11½	38	3½	38	8	39	0½
46	37	4½	37	8½	38	1	38	5½	38	9½	39	2	39	6½	39	10½
47	38	2½	38	6½	38	11	39	3½	39	7½	40	0½	40	4½	40	9
48	39	0	39	4½	39	9	40	1½	40	6	40	10½	41	3	41	7½
49	39	9½	40	2½	40	6½	40	10½	41	4	41	8½	42	1½	42	5½
50	40	7½	41	0	41	4½	41	9½	42	2½	42	6½	42	11½	43	4½
51	41	5½	41	10½	42	2½	42	7½	43	0½	43	4½	43	9½	44	2½
52	42	3	42	7½	43	0½	43	5½	43	10½	44	3	44	8½	45	1
53	43	0½	43	5½	43	10½	44	3½	44	8½	45	1½	45	6½	45	11½
54	43	10½	44	3½	44	8½	45	1½	45	6½	45	11½	46	4½	46	9

THIRTY TWOS.

Pgs	52s.		52s6d		53s.		53s6d		54s.		54s6d		55s.		55s6d	
	s.	d.	s	d	s	d	s	d	s	d	s	d	s	d	s	d
55	44	8¼	45	1½	45	6½	45	11½	46	4¾	46	9¾	47	3	47	8¼
56	45	6	45	11¼	46	4½	46	9¾	47	3	47	8¼	48	1½	48	6¾
57	46	3¾	46	9	47	2¼	47	7¾	48	1	48	6¼	48	11¾	49	5¼
58	47	1½	47	6¾	48	0¼	48	5¾	48	11¼	49	4½	49	10	50	3
59	47	11¼	48	4¾	48	10¼	49	3¾	49	9¼	50	2¾	50	8¼	51	1¾
60	48	9	49	2½	49	8¼	50	1¾	50	7½	51	1	51	6¾	52	0¾
61	49	6¾	50	0¼	50	6	50	11¾	51	5½	51	11¼	52	5	52	10¾
62	50	4½	50	10¼	51	4	51	9¾	52	3¾	52	9½	53	3¼	53	9
63	51	2¼	51	8	52	2	52	7¾	53	1¾	53	7¾	54	1½	54	7½
64	52	0	52	6	53	0	53	6	54	0	54	6	55	0	55	6

Pgs	56s.		56s6d		57s.		57s6d		58s.		85s6d		59s.		59s6d	
	s.	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1		10½		10½		10½		10¾		10¾		10¾		11		11
2	1	9	1	9	1	9¼	1	9½	1	9¾	1	9¾	1	10	1	10¼
3	2	7½	2	7¾	2	8	2	8¼	2	8½	2	8¾	2	9	2	9¼
4	3	6	3	6¼	3	6¾	3	7	3	7½	3	7¾	3	8¼	3	8½
5	4	4½	4	4¾	4	5¼	4	5¾	4	6¼	4	6¾	4	7¼	4	7¾
6	5	3	5	3½	5	4	5	4½	5	5¼	5	5¾	5	6¼	5	6¾
7	6	1½	6	2¼	6	2¾	6	3¼	6	4	6	4¾	6	5¼	6	6
8	7	0	7	0¾	7	1½	7	2¼	7	3	7	3¾	7	4½	7	5¼
9	7	10½	7	11¼	8	0	8	1	8	1¾	8	2½	8	3½	8	4¼
10	8	9	8	9¾	8	10¾	8	11¾	9	0¾	9	1½	9	2½	9	3½
11	9	7½	9	8½	9	9½	9	10½	9	11½	10	0½	10	1½	10	2½
12	10	6	10	7	10	8¼	10	9¼	10	10½	10	11½	11	0¾	11	1¾
13	11	4½	11	5½	11	6¾	11	8	11	9¼	11	10½	11	11¾	12	1
14	12	3	12	4¼	12	5¼	12	6¾	12	8¼	12	9½	12	10¾	13	0
15	13	1½	13	2¾	13	4	13	5½	13	7	13	8½	13	9¾	13	11¼
16	14	0	14	1½	14	3	14	4½	14	6	14	7½	14	9	14	10½
17	14	10½	15	0	15	1½	15	3¼	15	4¾	15	6½	15	8¾	15	9½
18	15	9	15	10½	16	0¼	16	2	16	3¾	16	5¼	16	7	16	8¾
19	16	7½	16	9¼	16	11	17	0¾	17	2½	17	4¼	17	6	17	7¾
20	17	6	17	7¾	17	9¾	17	11½	18	1½	18	3¼	18	5¼	18	7
21	18	4½	18	6¼	18	8¼	18	10¼	19	0¼	19	2¼	19	4¼	19	6¼
22	19	3	19	5	19	7	19	9	19	11¼	20	1¼	20	3¼	20	5
23	20	1½	20	3½	20	5¾	20	7¾	20	10	21	0¼	21	2¼	21	4½
24	21	0	21	2¼	21	4½	21	6¾	21	9	21	11½	22	1½	22	3¾
25	21	10½	22	0¾	22	3	22	5½	22	7¾	22	10	23	0½	23	2¾
26	22	9	22	11¼	23	1¾	23	4¼	23	6¾	23	9	23	11½	24	2

THIRTY TWOS.

Pag.	56s.		56s6d		57s.		57s6d		58s.		58s6d		59s.		59s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
27	23	7½	23	10	24	0½	24	3	24	5½	24	8	24	10½	25	1
28	24	6	24	8½	24	11½	25	1½	25	4½	25	7	25	9½	26	0½
29	25	4½	25	7	25	9½	26	0½	26	3½	26	6	26	8½	26	11½
30	26	3	26	5½	26	8½	26	11½	27	2½	27	5	27	7½	27	10½
31	27	1½	27	4½	27	7½	27	10	28	1	28	4	28	6½	28	9½
32	28	0	28	3	28	6	28	9	29	0	29	3	29	6	29	9
33	28	10½	29	1½	29	4½	29	7½	29	10½	30	1½	30	5	30	8
34	29	9	30	0	30	3½	30	6½	30	9½	31	0½	31	4	31	7½
35	30	7½	30	10½	31	2	31	5½	31	8½	31	11½	32	3	32	6½
36	31	6	31	9½	32	0½	32	4	32	7½	32	10½	33	2½	33	5½
37	32	4½	32	7½	32	11½	33	2½	33	6½	33	9½	34	1½	34	4½
38	33	3	33	6½	33	10	34	1½	34	5½	34	8½	35	0½	35	3½
39	34	1½	34	5	34	8½	35	0½	35	4	35	7½	35	11½	36	3
40	35	0	35	3½	35	7½	35	11½	36	3	36	6½	36	10½	37	2½
41	35	10½	36	2½	36	6	36	10	37	1½	37	5½	37	9½	38	1½
42	36	9	37	0½	37	4½	37	8½	38	0½	38	4½	38	8½	39	0½
43	37	7½	37	11½	38	3½	38	7½	38	11½	39	3½	39	7½	39	11½
44	38	6	38	10	39	2½	39	6½	39	10½	40	2½	40	6½	40	10½
45	39	4½	39	8½	40	0½	40	5	40	9½	41	1½	41	5½	41	9
46	40	3	40	7½	40	11½	41	3½	41	8½	42	0½	42	4½	42	8
47	41	1½	41	6	41	10½	42	2½	42	7	42	11½	43	3½	43	8½
48	42	0	42	4½	42	9	43	1½	43	6	43	10½	44	3	44	7½
49	42	10½	43	3	43	7½	44	0½	44	4½	44	9½	45	2	45	6½
50	43	9	44	1½	44	6½	44	11	45	3½	45	8½	46	1	46	5½
51	44	7½	45	0½	45	5	45	9½	46	2½	46	7½	47	0	47	4½
52	45	6	45	10½	46	3½	46	8½	47	1½	47	6½	47	11½	48	4
53	46	4½	46	9½	47	2½	47	7½	48	0½	48	5½	48	10½	49	3½
54	47	3	47	8	48	1	48	6	48	11½	49	4½	49	9½	50	2½
55	48	1½	48	6½	48	11½	49	4½	49	10	50	3½	50	8½	51	1½
56	49	0	49	5½	50	10½	50	3½	50	9	51	2½	51	7½	52	0½
57	49	10½	50	3½	50	9	51	2½	51	7½	52	1	52	6½	52	11½
58	50	9	51	2½	51	7½	52	1½	52	6½	53	0	53	5½	53	11
59	51	7½	52	1	52	6½	53	0	53	5½	53	11	54	4½	54	10
60	52	6	52	11½	53	5½	53	10½	54	4½	54	10	55	3½	55	9½
61	53	4½	53	10	54	3½	54	9½	55	3½	55	9	56	2½	56	8½
62	54	3	54	8½	55	2½	55	8½	56	2½	56	8	57	1½	57	7½
63	55	1½	55	7½	56	1½	56	7	57	1	57	7	58	0½	58	6½
64	56	0	56	6	57	0	57	6	58	0	58	6	59	0	59	6

THIRTY TWOS.

2½	60s.	60s6d	61s.	61s6d	62s.	62s6d	63s.	63s6d
	s d	s d	s d	s d	s d	s d	s d	s d
1	11½	11½	11½	11½	11½	11½	11½	11½
2	1 10½	1 10½	1 10½	1 11	1 11½	1 11½	1 11½	1 11½
3	2 9½	2 10½	2 10½	2 10½	2 10½	2 11	2 11½	2 11½
4	3 8	3 9½	3 9½	3 10	3 10½	3 10½	3 11½	3 11½
5	4 8½	4 8½	4 9	4 9½	4 10	4 10½	4 11	4 11½
6	5 7½	5 8	5 8½	5 9	5 9½	5 10½	5 10½	5 11½
7	6 6½	6 7½	6 8	6 8½	6 9½	6 10	6 10½	6 11½
8	7 6	7 6½	7 7½	7 8½	7 9	7 9½	7 10½	7 11½
9	8 5½	8 6	8 6½	8 7½	8 8½	8 9½	8 10½	8 11
10	9 4½	9 5½	9 6½	9 7½	9 8½	9 9	9 10	9 11
11	10 3½	10 4½	10 5½	10 6½	10 7½	10 8½	10 9½	10 10½
12	11 3	11 4	11 5½	11 6½	11 7½	11 8½	11 9½	11 10½
13	12 2½	12 3½	12 4½	12 5½	12 7	12 8½	12 9½	12 10½
14	13 1½	13 2½	13 4	13 5½	13 6½	13 8	13 9½	13 10½
15	14 0½	14 2	14 3½	14 4½	14 6½	14 7½	14 9	14 10½
16	15 0	15 1½	15 3	15 4½	15 6	15 7½	15 9	15 10½
17	15 11½	16 0½	16 2½	16 4	16 5½	16 7	16 8½	16 10½
18	16 10½	17 0	17 1½	17 3½	17 5½	17 6½	17 8½	17 10½
19	17 9½	17 11½	18 1½	18 3	18 4½	18 6½	18 8½	18 10
20	18 9	18 10½	19 0½	19 2½	19 4½	19 6½	19 8½	19 10
21	19 8½	19 10	20 0	20 2½	20 4	20 6	20 8	20 10
22	20 7½	20 9½	20 11½	21 1½	21 3½	21 5½	21 7½	21 9½
23	21 6½	21 8½	21 11	22 1	22 3½	22 5½	22 7½	22 9½
24	22 6	22 8½	22 10½	23 0½	23 3	23 5½	23 7½	23 9½
25	23 5½	23 7½	23 9½	24 0½	24 2½	24 4½	24 7½	24 9½
26	24 4½	24 6½	24 9½	24 11½	25 2½	25 4½	25 7	25 9½
27	25 3½	25 6½	25 8½	25 11½	26 1½	26 4½	26 6½	26 9½
28	26 3	26 5½	26 8½	26 10½	27 1½	27 4	27 6½	27 9½
29	27 2½	27 4½	27 7½	27 10½	28 1	28 3½	28 6½	28 9½
30	28 1½	28 4½	28 7	28 9½	29 0½	29 3½	29 6½	29 9
31	29 0½	29 3½	29 6½	29 9½	30 0½	30 3½	30 6	30 9
32	30 0	30 3	30 6	30 9	31 0	31 3	31 6	31 9
33	30 11½	31 2½	31 5½	31 8½	31 11½	32 2½	32 5½	32 8½
34	31 10½	32 1½	32 4½	32 8	32 11½	33 2½	33 5½	33 8½
35	32 9½	33 1	33 4½	33 7½	33 10½	34 2	34 5½	34 8½
36	33 9	34 0½	34 3½	34 7	34 10½	35 1½	35 5½	35 8½
37	34 8½	34 11½	35 3	35 6½	35 10	36 1½	36 5	36 8½
38	35 7½	35 11	36 2½	36 6	36 9½	37 1½	37 4½	37 8½
39	36 6½	36 10½	37 2	37 5½	37 9½	38 1	38 4½	38 8½
40	37 6	37 9½	38 1½	38 5½	38 9	39 0½	39 4½	39 8½
41	38 5½	38 9	39 0½	39 4½	39 8½	40 0½	40 4½	40 8

THIRTY TWOS.

Pa	60s.	60s6d	61s.	61s6d	62s.	62s6d	63s.	63s6d
	s d	s d	s d	s d	s d	s d	s d	s d
42	39 4½	39 8½	40 0½	40 4½	40 8½	41 0	41 4	41 8
43	40 3½	40 7½	40 11½	41 3½	41 7½	41 11½	42 3½	42 7½
44	41 2½	41 7	41 11½	42 2½	42 7	42 11½	43 2½	43 7½
45	42 1½	42 6½	42 10½	43 2½	43 7	43 11½	44 2½	44 7½
46	43 1½	43 5½	43 10	44 2½	44 6½	44 11	45 3½	45 7½
47	44 0½	44 5	44 9½	45 1½	45 6½	45 10½	46 3	46 7½
48	45 0	45 4½	45 9	46 1½	46 6	46 10½	47 3	47 7½
49	45 11½	46 3½	46 8½	47 1	47 5½	47 10	48 2½	48 7½
50	46 10½	47 3	47 7½	48 0½	48 5½	48 9½	49 2½	49 7½
51	47 9½	48 2½	48 7½	49 0	49 4½	49 9½	50 2½	50 7
52	48 9	49 1½	49 6½	49 11½	50 4½	50 9½	51 2½	51 7
53	49 8½	50 1	50 6	50 11	51 4	51 9	52 2	52 7
54	50 7½	51 0½	51 5½	51 10½	52 3½	52 8½	53 1½	53 6½
55	51 6½	51 11½	52 4½	52 10	53 3½	53 8½	54 1½	54 6½
56	52 6	52 11½	53 4½	53 9½	54 3	54 8½	55 1½	55 6½
57	53 5½	53 10½	54 3½	54 9½	55 2½	55 7½	56 1½	56 6½
58	54 4½	54 9½	55 3½	55 8½	56 2½	56 7½	57 1	57 6½
59	55 3½	55 8½	56 2½	56 8½	57 1½	57 7½	58 0½	58 6½
60	56 3	56 8½	57 2½	57 7½	58 1½	58 7	59 0½	59 6½
61	57 2½	57 7½	58 1½	58 7½	59 1	59 6½	60 0½	60 6½
62	58 1½	58 7½	59 1	59 6½	60 0½	60 6½	61 0½	61 6
63	59 0½	59 6½	60 0½	60 6½	61 0½	61 0½	62 0	62 6
64	60 0	60 6	61 0	61 6	62 0	62 6	63 0	63 6

Pa	64s.	64s6d	65s.	65s6d	66s.	66s6d	67s.	67s6d
	s d	s d	s d	s d	s d	s d	s d	s d
1	1 0	1 0	1 0	1 0½	1 0½	1 0½	1 0½	1 0½
2	2 0	2 0	2 0½	2 0½	2 0½	2 0½	2 1	2 1½
3	3 0	3 0½	3 0½	3 0½	3 1	3 1½	3 1½	3 2½
4	4 0	4 0½	4 0½	4 1	4 1½	4 1½	4 2½	4 3½
5	5 0	5 0½	5 0½	5 1½	5 1½	5 2½	5 2½	5 3½
6	6 0	6 0½	6 1½	6 1½	6 2½	6 2½	6 3½	6 3½
7	7 0	7 0½	7 1½	7 1½	7 2½	7 3½	7 3½	7 4½
8	8 0	8 0½	8 1½	8 2½	8 3	8 3½	8 4½	8 5½
9	9 0	9 0½	9 1½	9 2½	9 3½	9 4	9 5	9 5½
10	10 0	10 0½	10 1½	10 2½	10 3½	10 4½	10 5½	10 6½
11	11 0	11 1	11 2	11 3	11 4	11 5	11 6	11 7
12	12 0	12 1	12 2½	12 3½	12 4½	12 5½	12 6½	12 7½
13	13 0	13 1	13 2½	13 3½	13 4½	13 6	13 7½	13 8½

THIRTY TWOS.

2	64s.		64s6d		65s.		65s6d		66s.		66s6d		67s.		67s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
14	14	0	14	1½	14	2½	14	3½	14	5½	14	6½	14	7½	14	9
15	15	0	15	1½	15	2½	15	4	15	5½	15	7	15	8½	15	9½
16	16	0	16	1½	16	3	16	4½	16	6	16	7½	16	9	16	10½
17	17	0	17	1½	17	3	17	4½	17	6½	17	7½	17	9½	17	11
18	18	0	18	1½	18	3½	18	5	18	6½	18	8½	18	10	18	11½
19	19	0	19	1½	19	3½	19	5½	19	7	19	8½	19	10½	20	0½
20	20	0	20	1½	20	3½	20	5½	20	7½	20	9½	20	11½	21	1
21	21	0	21	1½	21	3½	21	5½	21	7½	21	9½	21	11½	22	1½
22	22	0	22	2	22	4	22	6	22	8½	22	10½	23	0½	23	2½
23	23	0	23	2	23	4½	23	6½	23	8½	23	10½	24	0½	24	3
24	24	0	24	2½	24	4½	24	6½	24	9	24	11½	25	1½	25	3½
25	25	0	25	2½	25	4½	25	7	25	9½	25	11½	26	2	26	4½
26	26	0	26	2½	26	4½	26	7½	26	9½	27	0	27	2½	27	5
27	27	0	27	2½	27	5	27	7½	27	10	28	0½	28	3	28	5½
28	28	0	28	2½	28	5½	28	7½	28	10½	29	1	30	3½	29	6½
29	29	0	29	2½	29	5½	29	8	29	10½	30	1½	30	4½	30	7
30	30	0	30	2½	30	5½	30	8½	30	11½	31	2	31	4½	31	7½
31	31	0	31	2½	31	5½	31	8½	31	11½	32	2½	32	5½	32	8½
32	32	0	32	3	32	6	32	9	33	0	33	3	33	6	33	9
33	33	0	33	3	33	6	33	9½	34	0½	34	3½	34	6½	34	9½
34	34	0	34	3	34	6½	34	9½	35	0½	35	3½	35	7	35	10½
35	35	0	35	3½	35	6½	35	9½	36	1	36	0	36	7½	36	10½
36	36	0	36	3½	36	6½	36	10	37	1½	37	4½	37	8½	37	11½
37	37	0	37	3½	37	7	37	10½	38	1½	38	5½	38	8½	39	0½
38	38	0	38	3½	38	7	38	10½	39	2½	39	5½	39	9½	40	0½
39	39	0	39	3½	39	7½	39	10½	40	2½	40	6½	40	9½	41	1½
40	40	0	40	3½	40	7½	40	11½	41	3	41	6½	41	10½	42	2½
41	41	0	41	3½	41	7½	41	11½	42	3½	42	7	42	11	43	2½
42	42	0	42	3½	42	7½	42	11½	43	3½	43	7½	43	11½	44	3½
43	43	0	43	4	43	8	44	0	44	4	44	8	45	0	45	4
44	44	0	44	4	44	8½	45	0½	45	4½	45	8½	46	0½	46	4½
45	45	0	45	4	45	8½	46	0½	46	4½	46	9	47	1½	47	5½
46	46	0	46	4½	46	8½	47	0½	47	5½	47	9½	48	1½	48	6
47	47	0	47	4½	47	8½	48	1	48	5½	48	10½	49	2½	49	6½
48	48	0	48	4½	48	9	49	1½	49	6	49	10½	50	3	50	7½
49	49	0	49	4½	49	9	50	1½	50	6½	50	10½	51	3½	51	8
50	50	0	50	4½	50	9½	51	2	51	6½	51	11½	52	4	52	8½
51	51	0	51	4½	51	9½	52	2½	52	7	52	11½	53	4½	53	9½
52	52	0	52	4½	52	9½	53	2½	53	7½	54	0½	54	5½	54	10
53	53	0	53	4½	53	9½	54	2½	54	7½	55	0½	55	5½	55	10½
54	54	0	54	5	54	10	55	3	55	8½	56	1½	56	6½	56	11½

THIRTY TWOS.

Yds.	64s.		64s6d		65s.		65s6d		66s.		66s6d		67s.		67s6d	
	s.	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
55	55	0	55	5	55	10½	56	3½	56	8½	57	1½	57	6½	58	0
56	56	0	56	5½	56	10½	57	2½	57	9	58	2½	58	7½	59	0½
57	57	0	57	5½	57	10½	58	4	58	9½	59	2½	59	8	60	1½
58	58	0	58	5½	58	10½	59	4½	59	9½	60	3½	60	8½	61	2
59	59	0	59	5½	59	11	60	4½	60	10	61	3½	61	9	62	2½
60	60	0	60	6½	60	11½	61	4½	61	10½	62	3	62	9½	63	3½
61	61	0	61	5½	61	11½	62	5	62	10½	63	0	63	10½	64	4
62	62	0	62	5½	62	11½	63	5½	63	11½	64	0	64	10½	65	4½
63	63	0	63	5½	63	11½	64	5½	64	11½	65	0	65	11½	66	5½
64	64	0	64	6	65	0	65	6	66	0	66	6	67	0	67	6

Yds.	68s.		68s6d		69s.		69s6d		70s.		70s6d		71s.		71s6d	
	s.	d.	s	d	s	d	s	d	s	d	s	d	s	d	s	d
1	1	0½	1	0½	1	0½	1	1	1	1	1	1	1	1½	1	1½
2	2	1½	2	1½	2	1½	2	2	2	2½	2	2½	2	2½	2	2½
3	3	2½	3	2½	3	2½	3	3	3	3½	3	3½	3	3½	3	4
4	4	3	4	3½	4	3½	4	4	4	4½	4	4½	4	5½	4	5½
5	5	3½	5	4	5	4½	5	5	5	5½	5	6	5	6½	5	7½
6	6	4½	6	4½	6	5½	6	6	6	6½	6	7½	6	7½	6	8½
7	7	5½	7	5½	7	6½	7	7	7	7½	7	8½	7	9	7	9½
8	8	6	8	6½	8	7½	8	8½	8	9	8	9½	8	10½	8	11½
9	9	6½	9	7½	9	8½	9	9½	9	10	9	10½	9	11½	9	0½
10	10	7½	10	8½	10	9½	10	10½	10	11½	10	0	11	1	11	2
11	11	8½	11	9½	11	10½	11	11½	12	0½	12	1½	12	2½	12	3½
12	12	9	12	10	12	11½	13	0½	13	1½	13	2½	13	3½	13	4½
13	13	9½	13	10½	14	0	14	1½	14	2½	14	3½	14	4½	14	6½
14	14	10½	14	11½	15	1	15	2½	15	3½	15	5	15	6	15	7½
15	15	11½	16	0½	16	2	16	3½	16	4½	16	6½	16	7½	16	9½
16	17	0	17	1½	17	3	17	4½	17	6	17	7½	17	9	17	10½
17	18	0½	18	2½	18	3½	18	5½	18	7	18	8½	18	10½	18	11½
18	19	1½	19	3	19	4½	19	6½	19	8½	19	9½	19	11½	20	1½
19	20	2½	20	4	20	5½	20	7½	20	9½	20	11	21	0½	21	2½
20	21	3	21	4½	21	6½	21	8½	21	10½	22	0½	22	2½	22	4
21	22	3½	22	5½	22	7½	22	9½	22	11½	23	1½	23	3½	23	5½
22	23	4½	23	6½	23	8½	23	10½	24	0½	24	2½	24	4½	24	6½
23	24	5½	24	7½	24	9½	24	11½	25	1½	25	4	25	6	25	8½
24	25	6	25	8½	25	10½	26	0½	26	3	26	5½	26	7½	26	9½
25	26	6½	26	9	26	11½	27	1½	27	4	27	6½	27	8½	27	11½
26	27	7½	27	9½	28	0½	28	2½	28	5½	28	7½	28	10	28	0½

THIRTY TWOS.

Pa.	68s.	68s6d	69s.	69s6d	76s.	70s6d	71s.	71s6d
	s d	s d	s d	s d	s d	s d	s d	s d
27	28 8½	28 10½	29 1½	29 3½	29 6½	29 8½	29 11½	30 1½
28	29 9	29 11½	30 2½	30 4½	30 7½	30 10	31 0½	31 3½
29	30 9½	31 0½	31 3	31 5½	31 8½	31 11½	32 2	32 4½
30	31 10½	32 1½	32 4	32 6½	32 9½	33 0½	33 3½	33 6
31	32 11½	33 2	33 5	33 7½	33 10½	34 1½	34 4½	34 7½
32	34 0	34 3	34 6	34 9	35 0	35 3	35 6	35 9
33	35 0½	35 3½	35 6½	35 10	36 1	36 4	36 7½	36 10½
34	36 1½	36 4½	36 7½	36 11	37 2½	37 5½	37 8½	37 11½
35	37 1½	37 5½	37 8½	38 0	38 3½	38 6½	38 9½	39 1
36	38 2	38 6½	38 9½	39 1	39 4½	39 7½	39 11½	40 2½
37	39 3½	39 7	39 10½	40 2	40 5½	40 9	41 0½	41 4
38	40 4½	40 8	40 11½	41 3	41 6½	41 10½	42 1½	42 5½
39	41 5½	41 8½	42 0½	42 4	42 7½	43 11½	43 3	43 6½
40	42 6	42 9½	43 1½	43 5½	43 9	44 0½	44 4½	44 8½
41	43 6½	43 10½	44 2½	44 6½	44 10	45 1½	45 5½	45 9½
42	44 7½	44 11½	45 3½	45 7½	45 11½	46 3	46 7	46 11
43	45 8½	46 0½	46 4½	46 8½	47 0½	47 4½	47 8½	48 0½
44	46 9	47 1	47 5½	47 9½	48 1½	48 5½	48 9½	49 1½
45	47 9½	48 1½	48 6	48 10½	49 2½	49 6½	49 11	50 3½
46	48 10½	49 2½	49 7	49 11½	50 3½	50 8	51 0½	51 4½
47	49 11½	50 3½	50 8	50 0½	51 4½	51 9½	52 1½	52 6
48	51 0	51 4½	51 9	52 1½	52 6	52 10½	53 3	53 7½
49	52 0½	52 5½	52 9½	53 2½	53 7	53 11½	54 4½	54 8½
50	53 1½	53 6	53 10½	54 3½	54 8½	55 0½	55 5½	55 10½
51	54 2½	54 7	55 1½	55 4½	55 9½	56 2	56 6½	56 11½
52	55 3	55 7½	56 0½	56 5½	56 10½	57 3½	57 8½	58 1
53	56 3½	56 8½	57 1½	57 6½	57 11½	58 4½	58 9½	59 2½
54	57 4½	57 9½	58 2½	58 7½	59 0½	59 5½	59 10½	60 3½
55	58 5½	58 10½	59 3½	59 8½	60 1½	60 7	61 0	61 5½
56	59 6	59 11½	60 4½	60 9½	61 3	61 8½	62 1½	62 6½
57	60 6½	61 0	61 5½	61 10½	62 4	62 9½	63 2½	63 8
58	61 7½	62 0½	62 6½	62 11½	63 5½	63 10½	64 4	64 9½
59	62 8½	63 1½	63 7½	64 0	64 6½	64 11½	65 5½	65 10½
60	63 9	64 2½	64 8½	65 1½	65 7½	66 1	66 6½	67 0½
61	64 9½	65 3½	65 9	66 2½	66 8½	67 2½	67 8	68 1½
62	65 10½	66 4½	66 10	67 3½	67 9½	68 3½	68 9½	69 3½
63	66 11½	67 5	67 11	68 4½	68 10½	69 4½	69 10½	70 4½
64	68 0	68 6	69 0	69 6	70 0	70 6	71 0	71 6

THIRTY TWOS.

72s.	72s6d	73s.	73s6d	74s.	74s6d	75s.	75s6d
s d	s d	s d	s d	s d	s d	s d	s d
1 1 1½	1 1½	1 1¼	1 1½	1 1½	1 1½	1 2	1 2
2 2 3	2 3	2 3½	2 3½	2 3½	2 3½	2 4	2 4½
3 3 4½	3 4½	3 4½	3 5½	3 5½	3 5½	3 6	3 6½
4 4 6	4 6½	4 6½	4 7	4 7½	4 7½	4 8½	4 8½
5 5 7½	5 7½	5 8½	5 8½	5 9½	5 9½	5 10½	5 01½
6 6 9	6 9½	6 10	6 10½	6 11½	6 11½	7 0½	7 0½
7 7 10½	7 11	7 11½	8 0½	8 1	8 1½	8 2½	8 3
8 9 0	9 01	9 1½	9 2½	9 3	9 3½	9 4½	9 5½
9 10 1½	10 2½	10 3	10 4	10 4½	10 5½	10 6½	10 7½
10 11 3	11 3½	11 4½	11 5½	11 6½	11 7½	11 8½	11 9½
11 12 4½	12 5½	12 6½	12 7½	12 8½	12 9½	12 10½	12 11½
12 13 6	13 7	13 8½	13 9½	13 10½	13 11½	14 0½	14 1½
13 14 7½	14 8½	14 9½	14 11	15 0½	15 1½	15 2½	15 4
14 15 9	15 10½	15 11½	16 0½	16 2½	16 3½	16 4½	16 6
15 16 10½	16 11½	17 0½	17 2½	17 4	17 5½	17 6½	17 8½
16 18 0	18 1½	18 3	18 4½	18 6	18 7½	18 9	18 10½
17 19 1½	19 3	19 4½	19 6½	19 7½	19 8½	19 11	20 0½
18 20 3	20 4½	20 6½	20 8	20 9½	20 10½	21 1	21 2½
19 21 4½	21 6½	21 8	21 9½	21 11½	22 0½	22 3	22 4½
20 22 6	22 7½	22 9½	22 11½	23 1½	23 3½	23 5½	23 7
21 23 7½	23 9½	23 11½	24 1½	24 3½	24 5½	24 7½	24 9½
22 24 9	24 11	25 1	25 3	25 5½	25 7½	25 9½	25 11½
23 25 10½	26 0½	26 2½	26 4½	26 7	26 9½	26 11½	27 1½
24 27 0	27 2½	27 4½	27 6½	27 9	27 11½	28 1½	28 3½
25 28 1½	28 3½	28 6	28 8½	28 10½	29 1	29 3½	29 5½
26 29 3	29 5½	29 8½	29 10½	30 0½	30 3	30 5½	30 8
27 30 4½	30 7	30 10½	31 0	31 2½	31 5	31 7½	31 10
28 31 6	31 8½	31 11½	32 1½	32 4½	32 7	32 9½	33 0½
29 32 7½	32 10	33 0½	33 3½	33 6½	33 9	33 11½	34 2½
30 33 9	33 11½	34 2½	34 5½	34 8½	34 11	34 1½	35 4½
31 34 10½	35 1½	35 4½	35 7	35 10½	36 1	35 3½	36 6½
32 36 0	36 3	36 6	36 9	37 0	37 3	37 6	37 9
33 37 1½	37 4½	37 7½	37 10½	38 1½	38 4½	38 8	38 11
34 38 3	38 6	38 9½	39 0½	39 3½	39 6½	39 10	40 1½
35 39 4½	39 7½	39 11	40 2½	40 5½	40 8½	41 0	41 3½
36 40 6	40 9½	41 0½	41 4	41 7½	41 10½	42 2½	42 5½
37 41 7½	41 10½	42 2½	42 5½	42 9½	43 0½	43 4½	43 7½
38 42 9	43 0½	43 4	43 7½	43 11½	44 2½	44 6½	44 9½
39 43 10½	44 2	44 5½	44 9½	45 1	45 4½	45 8½	46 0
40 45 0	45 3½	45 7½	45 11½	46 3	46 6½	46 10½	47 2½
41 46 1½	46 5½	46 9	47 1	47 4½	47 8½	48 0½	48 4½

THIRTY TWOS.

Pa.	72s.	72s6d	73s.	73s6d	74s.	74s6d	75s.	75s6d
	s. d	s. d	s. d.	s. d	s. d	s. d	s. d	s. d
42	47 3	47 6½	47 10½	48 2½	48 6½	48 10½	49 2½	49 6½
43	48 4½	48 8½	49 0½	49 4½	49 8½	50 0½	50 4½	50 8½
44	49 6	49 10	50 2½	50 6½	50 10½	51 2½	51 6½	51 10½
45	50 7½	50 11½	51 3½	51 8	52 0½	52 4½	52 8½	53 1
46	51 9	52 1½	52 5½	52 9½	53 1½	53 6	53 10½	54 3
47	52 10½	53 2½	53 7½	53 11½	54 4	54 8½	55 0½	55 5½
48	54 0	54 4½	54 9	55 1½	55 6	55 10½	56 3	56 7½
49	55 1½	55 6	55 10½	56 3½	56 7½	57 0½	57 5	57 9½
50	56 3	56 7½	57 0½	57 5	57 9½	58 2½	58 7	58 11½
51	57 4½	57 9½	58 2	58 6½	58 11½	59 4½	59 9	60 1½
52	58 6	58 10½	59 3½	59 8½	60 1½	60 6½	60 11½	61 4
53	59 7½	60 0½	60 5½	60 10½	61 3½	61 8½	62 1½	62 6½
54	60 9	61 2	61 7	62 0	62 5½	62 10½	63 3½	63 8½
55	61 10½	62 3½	62 8½	63 1½	63 7	64 0½	64 5½	64 10½
56	63 0	63 5½	63 10½	64 3½	64 9	65 2½	65 7½	66 0½
57	64 1½	64 6½	65 0	65 5½	65 10½	66 4	66 9½	67 2½
58	65 3	65 8½	66 2½	66 7½	67 0½	67 6	67 11½	68 5
59	66 4½	66 10	67 3½	67 9	68 2½	68 8	69 1½	69 7
60	67 6	67 11½	68 5½	68 10½	69 4½	69 10	70 3½	70 9½
61	68 7½	69 1	69 6½	70 0½	70 6½	71 0	71 5½	71 11½
62	69 9	70 2½	70 8½	71 2½	71 8½	72 2	72 7½	73 1½
63	70 10½	71 4½	71 10½	72 4	72 10	73 4	73 9½	74 3
64	72 0	72 6	73 0	73 6	74 0	74 6	75 0	75 6

Pa.	76s.	76s6d	77s.	77s6d	78s.	78s6d	79s.	79s6d
	s. d	s. d	s. d	s. d	s. d	s. d	s. d	s. d
1	1 2½	1 2½	1 2½	1 2½	1 2½	1 2½	1 2½	1 2½
2	2 4½	2 4½	2 4½	2 5	2 5½	2 5½	2 5½	2 5½
3	3 6½	3 7	3 7½	3 7½	3 7½	3 8	3 8½	3 8½
4	4 9	4 9½	4 9½	4 10	4 10½	4 10½	4 11½	4 11½
5	5 11½	5 11½	6 0	6 0½	6 1	6 1½	6 2	6 2½
6	7 1½	7 2	7 2½	7 3	7 3½	7 4½	7 4½	7 5½
7	8 3½	8 4½	8 5	8 5½	8 6½	8 7	8 7½	8 8½
8	9 6	9 6½	9 7½	9 8½	9 9	9 9½	9 10½	9 11½
9	10 8½	10 9	10 9½	10 10½	10 11½	11 0½	11 1½	11 2
10	11 10½	11 11½	12 0½	12 1½	12 2½	12 3	12 4	12 5
11	13 0½	13 1½	13 2½	13 3½	13 4½	13 5½	13 6½	13 7½
12	14 3	14 4	14 5½	14 6½	14 7½	14 8½	14 9½	14 10½
13	15 5½	15 6½	15 7½	15 8½	15 10	15 11½	16 0½	16 1½

THIRTY TWOS.

s.	76s.	76s6d	77s.	77s6d	78s.	78s6d	79s.	79s6d
	s. d	s. d	s. d	s. d	s. d	s. d	s. d	s. d
14	16 7½	16 8½	16 10	16 11½	17 0½	17 1½	17 3½	17 ½
15	17 9½	17 11	18 0½	18 1½	18 3½	18 4½	18 6	18 7½
16	19 0	19 1½	19 3	19 4½	19 6	19 7½	19 9	19 10½
17	20 2½	20 3½	20 5½	20 7	20 8½	20 10	20 11½	21 1½
18	21 4½	21 6	21 7½	21 9½	21 11½	22 0½	22 2½	22 4½
19	22 6½	22 8½	22 10½	23 0	23 1½	23 3½	23 5½	23 7
20	23 9	23 10½	24 0½	24 2½	24 4½	24 6½	24 8½	24 10
21	24 11½	25 1	25 3	25 5	25 7	25 9	25 11	26 1
22	26 1½	26 3½	26 5½	26 7½	26 9½	27 0½	27 1½	27 3½
23	27 3½	27 5½	27 7	27 10	28 0½	28 2½	28 4½	28 6½
24	28 6	28 8½	28 10½	29 0½	29 3	29 5½	29 7½	29 9½
25	29 8½	29 10½	30 0½	30 3½	30 5½	30 7½	30 10½	31 0½
26	30 10½	31 0½	31 3½	31 5½	31 8½	31 10½	32 1	32 3½
27	32 0½	32 3½	32 5½	32 8½	32 10½	33 1½	33 3½	33 6½
28	33 3	33 5½	33 8½	33 10½	34 1½	34 4	34 6½	34 9½
29	34 5½	34 7½	34 10½	35 1½	35 4	35 6½	35 9½	36 0½
30	35 7½	35 10½	36 1	36 3½	36 6½	36 9½	37 0½	37 3
31	36 9½	37 0½	37 3½	37 6½	37 9½	38 0½	38 3	38 6
32	38 0	38 3	38 6	38 9	39 0	39 3	39 6	39 9
33	39 2½	39 5½	39 8½	39 11½	40 2½	40 5½	40 8½	40 11½
34	40 4½	40 7½	40 10½	41 2	41 5½	41 8½	41 11½	42 2½
35	41 6½	41 10	42 0½	42 4½	42 7½	42 10½	43 1½	43 5½
36	42 9	42 11½	43 2½	43 6	43 9½	44 0½	44 4½	44 8½
37	43 11½	44 2½	44 6	44 9½	45 1	45 4½	45 8	45 11½
38	45 1½	45 5	45 8½	46 0	46 3½	46 7½	46 10½	47 2½
39	46 3½	46 7½	46 11	47 2½	47 6½	47 10	48 1½	48 5½
40	47 6	47 9½	48 1½	48 5½	48 9	49 0½	49 4½	49 8½
41	48 8½	49 0	49 3½	49 7½	49 11½	50 3½	50 7½	50 11
42	49 10½	50 2½	50 6½	50 10½	51 2½	51 6	51 10	52 2
43	51 0½	51 4½	51 8½	52 0½	52 4½	52 8½	53 0½	53 4½
44	52 3	52 7	52 11½	53 3½	53 7½	53 11½	54 3½	54 7½
45	53 5½	53 9½	54 1½	54 5½	54 10	55 2½	55 6½	55 10½
46	54 7½	54 11½	55 4	55 8½	56 0½	56 5	56 9½	57 1½
47	55 9	56 2	56 6½	56 10½	57 3½	57 7½	58 0	58 4½
48	57 0	57 4½	57 8	58 1½	58 6	58 10½	59 3	59 7½
49	58 2½	58 6½	58 11½	59 4	59 8½	60 1	60 5½	60 10½
50	59 4½	59 9	60 1½	60 6½	60 11½	61 3½	61 8½	62 1½
51	60 6½	60 11½	61 4½	61 9	62 1½	62 6½	62 11½	63 4
52	61 9	62 1½	62 6½	62 11½	63 4½	63 9½	64 2½	64 7
53	62 11½	63 4	63 9	64 2	64 7	65 0	65 6	65 10
54	64 1½	64 6½	64 11½	65 4½	65 9½	66 2½	66 8½	67 0½

THIRTY TWOS.

Pa	76s.		76s6d		77s.		77s6d		78s.		78s6d		79s.		79s6d	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d	s	d
55	65	3½	65	8½	66	2	66	7	67	0½	67	5½	67	11½	68	3½
56	66	6	66	11½	67	4½	67	9½	68	3	68	8½	69	1½	69	6½
57	67	8½	68	1½	68	6½	69	0½	69	5½	69	10½	70	4½	70	9½
58	68	10½	69	3½	69	9½	70	2½	70	8½	71	1½	71	7	72	0½
59	70	0½	70	6½	70	11½	71	5½	71	10½	72	4½	72	9½	73	3½
60	71	3	71	8½	72	2½	72	7½	73	1½	73	7	74	0½	74	6½
61	72	5½	72	10½	73	4½	73	10½	74	4	74	9½	75	5½	75	9½
62	73	7½	74	1½	74	7	75	0½	75	6½	76	0½	76	6½	77	0
63	74	9½	75	3½	75	9½	76	3½	76	9½	77	3½	77	9	78	3
64	76	0	76	6	77	0	77	6	78	0	78	6	79	0	79	6

Pa	80s.		Pa	80s.		Pa	80s.		Pa	80s.	
	s	d		s	d		s	d		s	d
1	1	3	17	21	3	33	41	3	49	61	3
2	2	6	18	22	6	34	42	6	50	62	6
3	3	9	19	23	9	35	43	9	51	63	9
4	5	0	20	25	0	36	45	0	52	65	0
5	6	3	21	26	3	37	46	3	53	66	3
6	7	6	22	27	6	38	47	6	54	67	6
7	8	9	23	28	9	39	48	9	55	68	9
8	10	0	24	30	0	40	50	0	56	70	0
9	11	3	25	31	3	41	51	3	57	71	3
10	12	6	26	32	6	42	52	6	58	72	6
11	13	9	27	33	9	43	53	9	59	73	9
12	15	0	28	35	0	44	55	0	60	75	0
13	16	3	29	36	3	45	56	3	61	76	3
14	17	6	30	37	6	46	57	6	62	77	6
15	18	9	31	38	9	47	58	9	63	78	9
16	20	0	32	40	0	48	60	0	64	80	0

CHAP. XIX.

ON PINE PRINTING.

We are grieved to find, on entering upon this subject, that we are deprived of the power (by the conduct of the majority of the Profession) of complimenting our brethren for the advance which they have made in the improvement of our Art. About twenty years back we were highly gratified with many of the productions of that day, and we then lived in hopes (from the spirit of emulation which was then abroad), that we should find the printers of the British Metropolis still persevering in the laudable career in which they had embarked, until they should have attained the grand summit of perfection. It was boasted, formerly, that the press of this country had arrived at a degree of excellence equal to that of any portion of the globe: but, alas! we must now say, that, latterly, the Art has made a retrograde, instead of a progressive movement. We can fancy that we hear our readers calling upon us to account for this falling off in the Profession; this we shall briefly do: the first blow was the disputes with the men, which ended in that ruinous system, the general introduction of out-door Apprentices: the second was the revival of the Stereotype process; and, lastly, the baneful effects of the Steam and Hand Machines, which have created such competition for low prices, that it is completely out of the power (except in a few instances) of the fair tradesman, and those who wish to improve the Art, to pursue that career by which alone a lasting fame can ever be attained. Notwithstanding what we have here advanced, there are a few individuals to whom our praise is justly due, for their steadily persevering in the course of improvement: this they have been enabled to do by uniformly adhering to the usual practice of the Profession.

The first step towards improvement was ventured (many years ago) by Mr. Baskerville, since which, others have made further advances towards perfection: but it is to be regretted, that uncontrolable causes preclude us from partaking of those benefits, which are so essentially necessary in the production of Fine Printing; we allude to the very changeable nature of this climate, the temperature of which is so variable, that it acts powerfully upon the oil of which our ink is composed, disposing it at one hour to spread equally over the balls, and at another rendering it so glutinous and stiff, as to tear the surface of the paper, and thereby baffle the utmost efforts of the pressman; even though he raise the temperature to summer heat, if the frost be intense, it will be of little avail: it has been proved, that heat will not entirely counteract the effects of a freezing atmosphere upon some kinds of printing ink. It is not the ink alone that is thus affected, but also the skin and composition balls, and likewise the rollers, which are so out of order at certain times, that it is utterly impossible for the pressmen to produce even passable common work, much less that of a superior kind: of these evils the public are little

aware, but they are severely felt both by the employer and the men. But there are other obstacles against the production of Fine Printing, or indeed work of any description; we allude to the introduction of cotton rag, and likewise ground Plaster of Paris (called *gypsum*) into the manufacture of fine and other papers, also the application of the oxygenated muriatic acid for the purpose of obtaining dispatch and delicacy of colour, and thereby producing a good paper in appearance, from an inferior staple. Nothing can be *more* perplexing to a printer, nor more detrimental to his labours, than what is termed *bleached* paper: for although it may be thick and seem strong in the ream, no sooner does the water penetrate through it, than it loses its adhesive quality, and becomes so loose and soft, as scarcely to bear handling, and in working sinks down *into* the letter, leaving a portion of its substance on the form after the impression, until it so clogs the type, that the work is often rendered scarcely legible. Nor is it less exceptionable *in* point of durability, as it must moulder away in a little time, with the common use which popular works generally undergo. It is well known to the Profession, that the best paper produced in this country is very inferior to that manufactured in France; the latter is very tough, and at the same time possesses a softness of texture which is well adapted for taking off fine impressions, and is far superior (in every point of view) to any description of paper which we can boast: but even this (great as are its advantages for Fine Printing) is far eclipsed by that which is manufactured in *China*, most particularly for wood engravings, although we cannot recommend it for strength or durability. There is paper made by Messrs. Longman and Dickinson, which approaches much nearer to that of the Chinese than any other, but it is also liable to similar objections with the last-mentioned.

The ever-varying changes of taste have caused strange revolutions in the appearance of our printing types; the thin and meagre-faced letter formerly in use, was supplanted (some years back) by that of a broad face, and no work was considered handsome if it was not printed with this bold type. It is sufficiently manifest that there was ample scope for improvement, previous to the discarding of the double letters; but, unfortunately, the rage carried them into an *opposite extreme*; some charged the face so full upon the body, that the letters appeared like an indistinct mass of black, which was unpleasant to read, and much fatigued the eye; others, in order to give their types the appearance of standing well in line, (which is certainly a great perfection), carried the horizontal line, at the top and bottom of the letter so far out on each side of the stem, that the page had somewhat the appearance of having been faintly ruled. Truly obvious must be the disadvantages attending the working of such letter, which could not possibly last so long as that of the old cut, because the slightest use would destroy the faint lines at the top and bottom of the letter, when it would exhibit the appearance of worn out type: besides, by presenting a much larger surface to the pressman, to be covered with ink, more care is required in beating and pulling; without which, it would appear worse than letter from the old matrices. We are happy to find that

time has began to correct the above evil, and types are now produced exhibiting that strength, grace, and lightness, which must ever be pleasing to the sight.

The art of Engraving on Wood, which is so closely connected with printing, also kept pace with it in improvement; and it is highly creditable to those gentlemen who have thus persevered in the advancement of the Art. We are of opinion, that the persons who formerly stated that a capricious taste was produced (from the attempts of the first-rate artists to rival copper) will now think otherwise, after viewing the most extraordinary productions which have appeared during the last twelve years: it was also asserted, that softness and delicacy could not be produced from them at the press; but in this their expectations have been disappointed, and we trust that we shall still witness much greater efforts towards perfection in this curious branch of Art, and that the printers will not be behind hand in executing their part, to the satisfaction of the admirers of Art, and all real judges.

It has been observed, that "no kind of engraving is better calculated to preserve the real outline and proportion of the designer, than that of which we are now speaking: this will be easily credited, when it is stated, that he generally makes the drawing with pencil upon the block, and the duty of the engraver is, with the greatest exactness, to leave those lines standing, by cutting away the interstices. Thus, as the most unfinished etchings on copper of the ancient masters are more valuable than any imitation of them by a second hand, the powers of the engraver on wood can always be depended upon, for giving, as far as the drawing and proportions are concerned, a faithful transcript of the performances of the designer."

The difficulties attending the printing of wood engravings are such as to require the greatest care and attention in the printer, otherwise, all the labour previously bestowed by the designer and engraver will prove abortive; the printer of fine wood engravings should have some knowledge of light and shade, without which he must of necessity find himself at a loss in preparing his subjects for the press, however great his skill may be in other respects; for it is from the nice touches alone that the beauty and effect of the engravings are brought out; of these difficulties the public are not aware, otherwise they would more highly prize works of Art on wood, than they have hitherto done.

There has been a most extraordinary demand for engravings on wood within the last twelve months, but we are sorry to observe, that by far the greater portion are of an inferior class, which reflect no credit on the eminent artists under whose names they are sent forth.

A difference of opinion exists respecting the colour of printing ink; some admire the glazing effect of a dark black, while others prefer the softened richness and warmth of a deep mellow tone, which is always pleasing to behold, without in the least being fatiguing to the sight. Ink-making being formerly confined to one or two persons, they troubled themselves little about improvement, until others started up, since which it must be acknowledged, very superior inks have been manu-

factured; and we humbly hope they will persevere in their career of improvement. The printer must exercise his judgment respecting the colour and the quality of the Ink.

With respect to the Press nothing need be advanced; in several of them, every requisite for Fine Printing is attained.

The paper to be wet in such a manner as to retain its firmness, yet be sufficiently soft to apply closely to the surface of the letter, and take up all the ink.

The Balls, on which so much depend, ought to be particularly attended to: those made with skins are now rarely used, they were supplanted by those of the composition, which are infinitely superior in every point of view; even the last-mentioned have been generally laid aside, and have given place to the Rollers, very many offices not having a single Ball in them. With respect to the Rollers, our ideas still remain the same, having pronounced (long before we had seen them in action) that they would not execute the work equal to the Balls: this opinion time has fully verified: we are ready to admit their excellence for heavy forms and the general run of work, but not for fine work, or wood engravings, for neither of which are they so well adapted as the Balls; as to the last, they are totally unfit to produce any impressions worthy of notice.

The tympans should always be kept in a state of tension, by changing or drying the blanket, and the inner tympan, and removing the slip-sheets, as they become damp.

The blankets must be of fine broad cloth, or kerseymere, and only one to be used.

When printing large letter, the surface of which requires to be well filled with ink, a sheet of tissue paper, or common paper damped, should be laid between every impression, to prevent the sheets from setting off on the back of each other.

Different opinions exist respecting what constitutes Fine Printing; some imagine, if they make their pages sufficiently black, that the end is answered; others, if they are pale and clear; so that each has a style peculiar to himself: therefore persons contend on this head, as though they were criticising a painting or an engraving.

It has been remarked, that "however laudable it may be to cultivate the art to perfection, it is to its common and more general application that we are to look for its great and beneficial effects upon the human intellect, and upon nations and societies of men. The Press is the great engine by which man is enabled to improve the faculties of his nature;—it is the preserver of the knowledge and acquirements of former generations, and the great barrier, when not perverted by the hand of power, against the debasement of the human mind, and the equalizing effects of despotism."

"Ages remote by thee, *Volitan*, taught,
Chain'd down to chance the winged thought;
With silent language mark'd the letter'd ground,
And gave to sight the evanescent sound.
Now, happier lot! enlighten'd realms possess
The learned labours of the immortal *Press*;
Nurs'd on whose lap the births of science thrive,
And rising arts the wrecks of Time survive."

Darwin's Temple of Nature.

CHAP. XX.

ALPHABETICAL LIST OF PRINTERS, AND THE PROFESSIONS CONNECTED WITH THE ART, IN THE BRITISH METROPOLIS AND ITS ENVIRONS.

Printers.

Abrahams, Clement's-l. Lomb.-st.
Allard, Bartholomew close.
Alexander, Whitechapel road.
Algar, Charles-st. Hatton garden.
Andrews, Garlick hill, Thames st.
Applegath, Duke st. Blackf. road.
Archer, Wilderness row.
Arliss, Stabling-lane.
Baldwin, Upton-st. Bridge-street,
Barfield, Wardour-st. Soho.
Barker, Crane court, Fleet street.
Barlow, Cannon street.
Barnard, Skinner-st. Snow-hill.
Barnes, Kent-street, Borough.
Batchelar, Long Alley, Moorfields.
Bates and Son, Howland-street.
Baynes, Cook's ct. Serle st.
Bedford, Bethnal Green.
Bennett, Cross-st. Carnaby-market
Bensley, Bolt-court, Fleet-street.
Beusley, Crane-court, do.
Bentley, Dorset st. Fleet st.
Bliss, Water-lane, Fleet street.
Bore, Stepney green.
Brettell, Rupert-st. Haymarket.
Bridgewater, S. Molton-st. Oxf. road
Bridges, Mrs. St. John's-st. Smithf.
Briggs, Bread st. Cheapside.
Brimmer, G. Strand lane.
Briscoe, Whitecross st. [grand.
Briscoe, Angel-st. St. Martin's le
Broadhead, Artillery ct. Chiswell st
Brook & King, Upper Thames st.
Brooke, Paternoster-row.
Brown, Moor st. Soho.
Brown, Broad court, Drury lane.
Brown, Chandos-st. Covent-gard.
Brown & Coun, Tyler-st. Carnaby m.
Bryan, Grocer's hall ct. Poultry.
Bryer, Bridewell, Bridge-st. Blackf.
Bullock, Lombard st. Fleet st.
Burton, Mrs. Fleet-market.
Burton & Co. Devonsh.-st. Bishopsg.
By, George yard, Lombard street.
Carpenter, Fetter lane.
Carpenter, Aldgate High-st. [sq.
Cartwright & Co. Brewer-st. Gold.
Cartwright, Bartholomew-close.
Catling, Rotherhithe.
Causton, Birchin-lane.
Cave, Islington green.
Chaplin, Crane-court, Fleet-st.
Clarke, Well-st. Jewin-st.
Clarke, J. & T. St. John's-square.
Clowes, Northumb.-court, Strand.
Coe, Knowle's ct. Little Carter l.
Compton, Middle-st. Cloth-fair.
Cordeux, 14, City-road.
Cornell, 38, Charing-cross.
Couchman, Throgmorton-street.
Cowell, 22, Terrace, Pimlico.
Cox, Son, & Baylis, Gt. Queen-st.
Cox, Westminster-road.
Craft, Well-st. Oxford-st.
Darton & Harvey, Gt. Eastcheap.
Darling & Co. Leadenhall-st.
Davis, Minories.
Davison, Lombard st. Fleet-st.
Davidson, Old Boswell-court.
Davy, Queen-st. Seven Dials.
Davy, James-st. Oxford-st.
Day, Goswell-street.
Dean & Munday, Threadneedle-st.
Delahoy, Mrs. Deptford-bridge.
Denham, Great Windmill-st.
Dennett, Union-build. Leather-l.
Dewick, Mrs. 46, Barbican.
Dolby, Catherine st. Strand
Diggens, St. Ann's-l. St. Martin's
Dove, St. John's-sq. [le grand.
Downes, 240, Strand.
Drake, Ratcliff Highway.
Drury, Fleet street.
Dutton, Red Lion ct. Fleet st.
Eaton, Tabernable-walk, Finsb.
Edwards, Crane-court, Fleet-st.
Ellerton & Henderson, Gough-sq.
Embleton, Goldsmith's row, Hack.
Evans & Ruffy, Budge-row, Walb.
Evans, J. & C. Long-lane, Smithf.
Fawcett, Peter's hill, Doctor's Com.
Fisher, Bartholomew close.
Fremont, Brown's l. Spitalfields.
Free School, Gower's-walk White-
Fry, Clifton-st. Sun-st. [chapel.
Gardiner, Princes st. Oxford st.
Gilbert, Badger-yard, St. John's-sq.
Gilbert, Salter's-hall-ct. Cannon-st

Gilmour, King-st. Borough.
Glendinning, 25, Hatton-garden.
Glindon, Rupert-st. Haymarket.
Gold, Wardour-st. Soho.
Gosnell, Little Queen-st. Lincoln's
Gosnall, Oxford market.
Goyder, Strand.
Gray, 2, Barbican.
Graves, W. & S. Sherbourne-lane.
Green, Leicester st. Leicester fields
Greenshaw, High Holborn.
Gunnell, Salisbury-sq. Fleet-st.
Gye & Balne, Gracechurch-st.
Haddon, Tabernacle-walk, Finsb.
Hall, Wardour-st. Soho.
Hamblin, Sugar-loaf-ct. Garlick-h.
Hancock, Silver-st. Wood-st. Ch.
Hancock, Mid.-row-passage Holb.
Handy, Whitcomb-street.
Hansard, L. Gt. Turnstile, Holb.
Hansard, L. jun. Parker's-l. Drury-l.
Hansard, T. Paternoster row.
Harjette, Bedford st. Covent gard.
Harris, St. Martin's lane.
Harrison, Lancaster-ct. Strand.
Hartnell, Wine-office-ct. Fleet-st.
Harvey, 22, Blackfriars'-road.
Hayden, Little College-st. Westm.
Hayes, Dartmouth-st. Westminst.
Hazard, London-wall, Moorfields.
Helder, Little Britain.
Hersee, 5, Goswell street.
Hewitt, 146, High Holborn.
Hex, Old street.
Hildyard, Poppin's ct. Fleet st.
Holden, Fleet-street.
Hollis, Shoemaker row, Blackf.
Holmes, Long Acre.
Holstead, Ossulston-st. Somers'-town.
Howlett, Frith-st. Soho.
Howlett, Upper Thames-st.
Hughes, Malden-lane Covent-gard.
Hughes, Paternoster-row.
Innes, Well-st. Oxford st.
Jaques, Lower Sloane-st. Chelsea.
Jaques & Wright, Newington butts
Johnson, Brook-st. Holborn.
Justins, Warwick-sq. Newgate-st.
Justins, Brick-lane, Spital-fields.
Kaygill, Frith street, Soho.
Keating, Duke st. Grosvenor sq.
Kelly, Houndsditch.
Kerwood & Cox, John-st. Edgw. road.
Kinnersley, Kingsland-road.
King's Office, Printers st. Shoe-l.
Knight, St. Catharine's.
Larrance, Dorset-st. Salisbury-sq.
Lee, Half-moon-street.
Lewis, Finch-lane, Cornhill.
Lewis, John-st. Crutched Friars.
Limbird, Strand.
Lindsay, Portpool-l. Gray's Inn-l.
Livermore, 59, Fetter lane, Holb.
Low, Gracechurch street.
Lowndes, Marquis-ct. Drury-lane.
Lyon, John st. Edgware road.
M'Creery, Took's-ct. Chancery-l.
Macdonald, Gt. Sutton-st. Clerk.
M'Dowall, Leadenhall-st.
M'Dowall, Pemberton-row, Gough sq.
Mackintosh, New-st. Gough-sq.
M'Gowan, Gt. Windmill-st. Haym.
Macpherson, Cross-ct. Russell-ct.
M'Millan, Bow-st. Covent-garden.
Maiden, Sherbourne-l. Lomb.-st.
Mallett, Wardour-st. Soho.
Mantz, Brick-lane, Spital-fields.
Marchant, Ingram-ct Fenchurch-st
Marshall, Kenton-st Brunswick-sq
Marsland, Castle-ct. Birchin-lane.
Mason, Clerkenwell-green.
Mason, High-st. Borough.
Meseder, Little Russell street.
Mills, Shoe-lane.
Milne & Banfield, Swan ct. Fleet st.
Mitcham, Whitechapel road.
Molineaux, Bream's-bldgs. Chancery-l.
Moore, Drury-lane.
Morgan, 25, Fleet street.
Moyes, Greville-st. Leather-lane.
Myers, Bedford-pl. Commercial-r.
Newman, Widegate-st. Bishopsg.
Nicholls, Earl's-ct. Leicest.-sq.
Nicholls, Warwick-sq. Newgate-st.
Nichols & Son, King-st. Westm.
Nicholls, Grub-street.
Nicholls, Hampstead-road.
Nicol, Russel-ct. St James.
Norton, Charlotte-st. Fitzroy-sq.
Ogilvie, Crooked-l. Cannon-st.
Osborne, Tooley-st. Borough.
Page, Commerce-row, Blackf.-rd.
Papineau, Hart st. Mark lane.
Paris, Long Acre.
Peart, St. John's-street.
Pesman, Butcher-row, Smithfield.
Pewtress & Low, Gracechurch-st.
Phillips, George-yard, Lomb.-st.
Philanthropic Reform, London rd.
Pigott, Old-street.
Pigott, Compton-st. Clerkenwell.
Pinder, Q.'s head ct. Paternoster r.
Pitts, St. Andrew-st. Seven Dials.
Pitman, Warwick-sq. [Eastcheap.
Plummer & Brewis, Love-l. Little
Plummer, jun. Little Eastcheap.
Pople, Chancery-l. Holb. [lebone.
Poulter, Gt. Chesterfield-st. Mary-
Redford & Robins, London-road.
Reed, Johnson's-ct. Fleet-st.
Reynell, Broad-st. Carnaby-mark.

Reynolds, Denmark ct. Strand.
Rhynd, Mrs, Ray-st. Clerkenwell.
Richards, St. Martin's-l. [Poultry.
Richards & Co. Grocer's-hall-ct.
Richards, Warwick st. Golden sq.
Richardson, High Holborn.
Rider & Weed, Little Britain.
Robarts, Shoe-lane.
Robins, Tooley-st. Borough
Robins, Ivy lane, Newgate street.
Robins, 482, Strand. [Tower-st.
Robson & Co. St. Dunstan's-hill,
Rogers, Red Lion-st. Clerkenwell.
Romney, Bridge-road, Lambeth.
Rothery, Minories.
Rothwell, Lime street.
Rowe, Warwick-square.
Roworth, Bell-yard, Temple-bar.
——, Shacklewell.
Sabine, Shoe-lane.
Schulze, Poland-st. Oxford-st.
Sculthorpe, Chapel st. Cripplegate.
Severn, Sweet-apple-ct. Bishopsg.
Seyfang, Walworth.
Shackell, Johnson's-ct. Fleet-st.
Shanly, Gt. Guildford st. Southw.
Shaw, Fetter Lane.
Shuttleworth & Co. Poultry.
Sidney, Northumberland-st. Strand
Silver, Newman st. Oxford st.
Skirven, Ratcliff highway.
Slater, Newton st. Holborn.
Smales, Aldersgate street.
Smeeton, Arcade, Pall Mall.
Smith, King-st. Seven Dials.
Sorrell, Bartholomew-close.
Soulby, Savage-gardens, Tower-h.
South, Coppice row, Clerkenwell.
Spencer, East-st. Manchester-sq.
Spragg, Bow-st. Covent-garden.
Stokes, Lombard-street.
Stower, Mrs. Clapton.
Sufferson, Lit. Warner-st. Clerken.
Sutton, Lucas-st. Gray's-Inn-l.-rd.
Swan; Fleet street.
Taylor, Lamb's-conduit-passage.
Taylor, R. Printer's-ct. Shoe-lane.
Taylor, A. Basinghall-street.
Teape & Son, George-yard, Tower-
Teulon, Whitechapel. [hill.
Tew, Queen-st. Cheapside.
Thetford, Skinner-st. Bishopsgate.
Thiselton, Goodge-st. Tottenham-
Thompson, Gt. St. Helens. [ct. rd.
Thomas, Red Lion st. Borough.
Thomas, High st. Bloomsbury.
Thomas, Denmark ct. Strand.
Thorowgood, Addle st. Cheapside.
Tilling, Grosvenor row, Chelsea.
Topping, Play-house-yard, Blackf.
Turner, Aldersgate-street.
Twigg, Fleet street.
Tyler & Honeyman, Well-st.
Tyler, Rathbone-place, Oxf.-road.
Tyler, Bridgewater-sq. Barbican.
Valpy, Red Lion-ct. Fleet-street.
Vogel, Castle-st. Falcon-sq.
Wadham & Co. Upper Thames-st.
Wallis, Camden Town.
Walwyn, West Harding st. Fetter l.
Warr, Red Lion-pas. Red Lion-sq.
Warwick, Brook st. Holborn.
Watts, Crown-ct. Pickett-st. Strand
Whiting, Lombard-street.
White, New-st. Bishopsgate-st.
Wilkins, Brunswick st. Blackf.
Williams, 13, Strand.
Wilson, George-ct. Piccadilly.
Wilson, Greville-st. Leather-lane.
Whittingham, Chiswick.
Woodfall, T. York-st. Westminst.
Woodfall, G. Angel-ct. Skinner-st.
Woods, Swan-court, Fleet-street.
Woods, Hart-st. Grosvenor-sq.
Wood, Poppin's-court, Fleet-st.
Wood, Swan yard, Strand.

NEWSPAPER PRINTING OFFICES.

Daily Morning.

British Press, 181, Strand.
Morning Chronicle, Strand.
Morning Herald, Catherine st. Str.
Morning Post, 335, Strand.
Morning Advertiser, 127, Fleet st.
New Times, Crane ct. Fleet street.
Public Ledger, Warwick sq.
Times, Printing house sq. Blackf.

Daily Evening.

British Traveller, Black horse ct. Fleet street.
Courier, 348, Strand.
Globe and Traveller, Strand.
Star, Picket place, Strand.
Sun, 112, Strand.

Three times a Week.

English Chron. Catherine st. Str.
Evening Mail, Printing house sq.
London Packet, Bridge st. Blackf.
St. James's Chron. Bridge st. Black.

Twice a Week.

Courier de Londres, Gt. Queen st.
London Gazette, Cannon row, West.

Weekly.

Baldwin's Journal, Bridge st. Black.
Bell's Messenger, St. Bride's pass.
British & Indian Observer, Strand.
British Moultor, Catherine street.
County Chronicle, Warwick sq.
County Herald, Warwick sq.
Egan's Life in London, Strand.

Englishman, Strand.
Examiner, Tavistock st. Cov. gar.
Farmer's Journal, Bridge row, Walb.
Fleming's Weekly Express, Fleet st.
Guardian, Fleet st. {Strand.
Bell's Life in Lond. One Bell yard,
Imperial Weekly Gazette, Lomb. st.
John Bull, Johnson's ct. Fleet st.
LawChron. Peter's hill, Doct. Com.
Literary Gazette, Strand.
Literary Chron. Surry st. Strand.
Literary Museum, Bridges st.
News, Brydges st. Covent garden.
Observer, 169, Strand.
Philanthropic Gazette, Leather l.
Sunday Times, Fleet street.
Sunday Monitor, Lombard street.
Sunday Morn. Herald, Catherine st.
Weekly Dispatch, Wine office ct.
Weekly Register, 127, Fleet st...
Weekly Globe, Strand.
Wooler's Gazette, 76, Fleet street.

LIST OF TRADES CONNECTED WITH THE ART.

Letter Founders.

Austin & Son, Worship-st. Shored.
Barton, Stanhope-st. Clare-market,
Caslon & Co. Chiswell-st. Finsbury
Catherwood, Charles-sq. Hoxton.
Figgins, West st. Smithfield.
Fry & Son, Type-st. Chiswell-st.
Hughes, Dean st. Fetter l. Holb.
Pouchée, Little Queen-st. Holborn.
Thorowgood, Fann-st. Aldersg.-st.

Iron Press Makers.

Brooks, Wild ct. Lincoln's Inn f.
Clymer, Finsbury st. Finsbury sq.
Cogger, Wardrobe ter. Doct. Com.
Cope, North st. Chapple st. Finsb.
Shield & Co. High Holborn.
Taylor & Co. City road, nr Canal.
Walker, (first Maker of the Stanhope Press), Dean st. Oxford st.

Printers' Joiners, &c.

Arding & Son, Dorset-st. Fleet-st.
Baker, Leather lane.
Brazier, Castle st. Southwark.
Granger, Sea coal l. Fleet market.
Hampson, Long-lane, Smithfield.
Meady Cow Cross-st. Smithfield.
Matthews, Duke-st. Lincoln's Inn-f.
Paul, Saffron-hill, Hatton-garden.
Sperry, Hemlock ct. Carey st.
Toovey, Chichester rents, Chanc. l.

Printing Ink Makers.

Bell, Brunswick-st. Blackf.-road.
Bishop, 10, Fisher-st. Red Lion-sq.
Agent for Martin & Co. Birming.
Clark, 22, Lit. Queen st. Agent for Thornley & Co. Birmingham.
Colvil, King-st. Compton-st. Clerk.
Dickson, St. James's-walk, Clerk.
Griffiths, Copplee-row, Clerkenwell
Wimble, Southampton st. Camb.

Printers' Smiths.

Brooks, Wild ct. Lincoln's Inn f.
Coates, Leather lane, Holborn.
Cook, Brook st. Holborn.
Cope, North st. Chapple st. Finsb.
Medbury, Seacoal lane.
Townsend, Bell ct. Gray's Inn lane

Composition Ball, &c. Makers.

Foster, Ship court, Old Bailey.
Harrild, Friday street, Cheapside.
Izod & Hubbard, Fleet market.

Designers.

Blunt, * Mills,
Brooke, Newman st. Oxford street.
Corbould, Burton Crescent.
Cruic, Charles st. Middlesex hosp.
Cruikshank, Pentonville.
Fussell, Lloyd's row, Islington.
Harvey, 47, Foley st. Cavendish sq.
Stothard, R. A. Newman st. Oxf. rd.

Engravers on Wood.

Armstrong, Guildford st. E. Spa f.
Austin, Paul's Alley, Barbican.
Berryman, Cursitor st. Chancery l.
Bonner, Canterbury row Kennington
Branston, Beaufort bldgs. Strand.
Byfield, Ashton place, Islington.
Byfield, Mary, Ashton place, do.
Dodd, Branch Terrace, Hoxton.
Hughes, Hatfield st. Blackf. road.
Lee, Union place, City road.
Mason, Penton place, Pentonville.
March, Gough square.
Mosses, White Cross st. Cripplegate.
Sears, Angel Terrace, Islington.
Thompson, Wiple place, Kensingt.
Walker, Charles st. Hatton garden
White, St. John's l. St. John's sq.
Williams, Harrison st. Gray's Inn l.
Willis, Market st. Islington road.

Brass Rule Cutters, &c.

Bissagar, 397, Strand.
Cook, Brook street, Holborn.
Francis, Dean st. High Holborn.
Scott, 393, Strand.
Pans, High Holborn.
Timbury, Fetter lane.

Skin Dealers.

Brown, Long lane, Bermondsey.
Youd, Russell st. do.

Auctioneers.

Delahoy, Deptford Bridge.
Richardson, Hoxton road.
Saunders, Fleet street.

CHAP. XXI.

TECHNICAL TERMS MADE USE OF BY THE PROFESSION.

We have here introduced the whole of the Technical Terms, that posterity may know the phrases used by the early nursers and improvers of our Art.

Abbreviations. Marks to contracted words.

Accents. Marks over vowels.

Ball-knife. A blunt knife used to scrape balls.

Ball-nails. Tacks used in knocking-up balls.

Bank. A stage about four feet high, placed near the press.

Beard of a Letter. The outer angle of the square shoulder of the shank, which reaches almost to the face of the letter, and commonly scraped off by founders.

Bearer. A piece of riglet to bear the impression off a blank page.

Bienvenue. The fee paid on admittance into a chapel.

Bite. Is when the entire impression of the page is prevented by the frisket's not being sufficiently cut out.

Blankets. Woollen cloth, or white baize, to lay between the tympans.

Body. The shank of the letter.

Bottled-Arsed. When letter is wider at the bottom than the top.

Bottom-line. The last line of the page preceding the catch line.

Brace. Is a character cast in mettle, marked thus ⌐ of several breadths.

Brayer. Is a round wooden rubber, almost of the fashion of a ball-stock, but flat at the bottom, and not above three inches diameter; it is used in the ink-block to bray or rub ink.

Break. A piece of a line.

Broad-side. A form of one full page, printed on one side of a whole sheet of paper.

Broken Letter. By broken letter is not meant the breaking of the shanks of any of the letters, but the breaking the orderly succession the letters stood in a line, page, or form, &c. and mingling the letters together, which mingled letters is called pye.

Bur. When the Founder has neglected to take off the roughness of the letter in dressing.

Cards. About a quire of paper, which Pressmen use to pull down the spring or rising of a form, which it is many times subject to by hard locking up.

Cassio Paper. Broken paper.

Choak. If a form be not washed in due time, the ink will get into the hollows of the face of the letter: and that getting in of the ink is called choaking of the letter, or choaking of the form.

Clean Proof. When a proof has but few faults in it, it is called a clean proof.

Close matter. Matter with few breaks.

Correct. When the Corrector reads the proof, or the Compositor mends the faults marked in the proof, they are both said to correct; the Corrector the proof, the Compositor the form.

Corrections. The letters marked in a proof are called Corrections.

Devil. The Errand-boy of a Printing-house.

Direction. The word that stands alone on the right hand in the bottom line of a page.

Direction-line. The line the direction stands in.

Double. Among Compositors, a repetition of words; also, among Pressmen, a sheet that is twice pulled and lifted over so little off the form after it was first pulled, does most commonly (through the play of the joints of the tympans, take a double impression: this sheet is said to double. Doubling also happens by the loose hanging of the platten, and by too much play the tenons of the head may have in the mortises of the cheeks, and indeed may be occasioned by the decay of several parts of the press.

Dressing a Chase or Form. The fitting the pages and chase with furniture and quoins.

Drive out. When a compositor sets wide.

Empty Press. A press that is unemployed; in general every printing-office has one for a proof-press.

Even page. The 2d, 4th, 6th, or any other even numbered page.

Fat face, or fat letter, is a broad stemmed letter.

Fat work. Is when there are many white-lines or break-lines in a work.

Fat form. When the pressman has a single pull.

First Form. The form the white paper is printed on, which generally has the first page of the sheet in it.

Fly. The person that takes off the sheets from the press in cases of expedition.

Follow. That is, see if it follows; is a term used as well by the corrector as by the compositor and pressman. It is used by the corrector and compositor when they examine how the beginning matter of a succeeding page agrees with the ending matter of the preceding one; and how the folios of these pages properly and numerically follow and succeed one another, lest the pages should be transposed. But the pressman only examines whether the folio and beginning word of the second page, and signature of the first and third page, when the reiteration is on the press, follows the folio and direction of the first page, and the signature of the third page follows the signature of the first page, lest the form should be laid wrong on the press.

Foot of a Page. The bottom or end of a page.

Form. The pages when fitted into a chase.

Foul Proof. When a proof has many faults marked in it.

Fount. Is the whole number of letters that are cast of the same body and face.

Frict. When the balls do not take, the un-inking part of the balls that touches the form will be left white, or if the pressman skip over any part of the form, and touch it not with the balls, though they do take, yet in both these cases the white places are called friars.

Full Form or Page. A form or page with few or no breaks, or white lines.

Full Press. When two men work at the press.

Fudge. To contrive without necessary materials, or do work in a bungling manner.

Get-in. Matter is got in in a line, page, sheet, or book, if letter be thinner cast than the printed copy the compositor sets from. Or matter is got in if the compositor sets closer.

Good Colour. Sheets printed neither too black nor too white.

Good of the Chapel. Forfeitures and other chapel dues collected for the good of the chapel, to be spent as the chapel approves.

Good Work. Is called so in a two-fold sense: the master printer calls it good work when the compositors and pressmen have done their duty; and the workmen call it good work, if it be light easy work, and they have a good price for it.

Half Press. When but one man works at the press.

Half Work. He that works but three days in the week, does but half work.

Head Page. The beginning of a subject.

Heap. So many reams or quires as are set out by the Warehouse-keeper for the pressman to wet.

Heap holds out. When it hath its full number of sheets.

Holds out, or holds not out. These terms are applicable to the quires of white paper, to wrought off heaps, to gathered books, and sorts of letter, &c. If quires of white paper have twenty-five sheets each in them, they say the paper holds out five and twenties. Of wrought-off heaps, the heap that comes off first in gathering is said, not to hold out. Of gathered books, if the intended number of perfect books are gathered, they say the impression holds out: but if the intended number of perfect books cannot be gathered off the heaps, the impression holds not out. And so of letter.

Horse. The stage pressmen set the heaps of paper on their banks.

Horse. If any journeyman set down in his bill on Saturday night more work than he has done, that surplus is called horse.

Hours. Pressmen reckon their work by hours, reckoning every token to an hour's work: and though it be the same effectually with tokens, yet they make their prices of different work by the hour; and it passes current for a token. If two men work at the press ten quires is an hour; if one man five quires is an hour.

Imperfections of Letters. When the founder has not cast a proportionable number of each sort of letter, it is making the rest of the fount imperfect.

Insertion. If the compositor has left out words or lines, the corrector inserts it, and makes this mark ∧ where it is left out.

Keep in. Is a caution either given to, or resolved on, by the compositor, where there may be doubt of driving out his matter beyond his counting off, wherefore he sets close, to keep in.

Keep out. A caution either given to or resolved on, by the compositor, when there may be doubt of getting in his matter too fast, wherefore he sets wide, to drive or keep out.

Kern of a Letter. That part which hangs over the body or shank.

Lean Face. A letter whose stems and other strokes have not their full width.

Letter Hangs. If the compositor is careless in emptying his composing stick, so as to let the letter loosely down in the galley, and they stand not perfectly square and upright, the letter hangs: or if after overrunning on the correcting stone he has not set his letters in a square position again, before he locks up, the letter thus out of square, is said to hang.

Long Pull, is when the bar of the press requires to be brought close to the cheek to make a good impression.

Low Case. When the compositor has composed almost all his letters out of his case.

Mackle, when part of the impression on a page appear double, owing to the plattin's dragging on the frisket.

Matter. The series of the discourse of the compositor's copy.

Measure. The width of a page.

Monk. When the pressman has not distributed his balls, and the ink lies in blotches, it is called a monk.

Naked Form. When the furniture is taken from about all the sides of the pages.

Odd Page. The 1st, 3rd, and all uneven numbered pages.

Off. Pressmen are said to be off when they have worked off the designed number from a form.

Out. A compositor is said to be out, when he has set all his copy.

Out of Register. When pages are not worked even on each other.

Pale Colour. When the sheets are worked off with too little ink.

Pelts. Unmanned sheep skins used for balls.

Picks. When any dirt gets into the hollows of the letter, which chonks up the face of it, and occasions a spot.

Point Holes. Holes made by the points in a worked off sheet of paper.

Press goes. When the pressmen are at work.

Press stands still. When they are not at work.

Pye. When a page is broken, and the letters confused.

Quarters. Octavos and twelves forms are said to be imposed in quarters, not from their equal divisions, but because they are imposed and locked up in four parts.

Register sheet. Sheet or sheets printed to make register with.

Reiteration. The second form, or the form printed on the back side of the white paper.

Riglet. Is a thin sort of furniture, of an equal thickness all its length. It is quadrat high, and made to the thickness of type.

Rise. A form is said to rise, when in rearing it off the correcting stone, no letter or furniture, &c. drop out.

Runs on Sorts. When matter uses only a few sorts of letter.

Set off. Sheets that are newly worked off at the press often sets off,

and more particularly so when beaten with soft ink.

Shank. The square metal the face of a letter stands on.

Signature. Any letter of the alphabet used at the bottom of the first page of a sheet, as a direction for the binders to place the sheets in a volume.

Slur. When the impression of the sheets appear smeared.

Smout. When either compositors or pressmen are employed for a short time and not engaged for a constancy.

Sop the balls. When a pressman has taken too much ink.

Sorts. The letters that lie in every box of the case are separately called sorts in printers and founders' language; thus *a* is a sort, *b* is a sort, &c.

Squabble. A page or form is squabbled when the letter of one or more lines are got into any of the adjacent lines; or that the letter or letters are twisted about out of their square position.

Stem. The straight flat strokes of a straight letter is called stem.

Superior Letters are often set to marginal notes, references or authorities; they are letters of a small face, justified by the founder in the mold near the top of the line.

Thin spaces ought, by a strict orderly and methodical measure to be made of the thickness of the seventh part of the body; though founders make them indifferently thicker or thiner.

Turn for a letter. It often happens when matter runs upon sorts, especially in capitals or some other sorts seldom used, that the compositor wants that sort the matter runs on; wherefore he is loth to distribute letter for that sort; as perhaps his case is otherwise full. Then instead of that letter or sort, he turns a letter of the same thickness, with the foot of the shank upwards, and the face downwards; which turned letter being easy to be seen, he afterwards (when he can accommodate himself with the right sort), takes out, and puts the right letter in its room. It is also a word used jocosely in the chapel; when any of the workmen complain of want of any thing, he shall by another workman be answered, turn for it; that is, make shift for it.

Vantage. When a white page or more happens in a sheet, the compositor calls that vantage: so does the pressman, when a form of one pull comes to the press.

Underhand. A phrase used by pressmen for the light and easy, or heavy and hard running in of the carriage. Thus they say, the press goes light and easy under hand, or it goes heavy or hard under hand.

Upper hand, when the spindle goes soft and easy, the pressmen say, it goes well under hand, or above hand. But the contrary if it goes hard and heavy.

White-line. A line of quadrats.

White page. A page that no matter comes in.

White paper. Although the first form be printed off, yet pressmen call that heap white paper, till the reiteration be printed

CHAP. XXII.

ON STEREOTYPE, AND STEAM AND HAND MACHINES.

BEING now arrived at the period when we are called upon to perform a most serious and important part of our duty, and it is with a degree of pain that we find ourselves reluctantly compelled to advert to it: we allude to the very peculiar and most extraordinary transactions which have taken place in the profession (particularly within the last twenty years) since the partial introduction of the *Stereotype* process; and, latterly, that of *Steam* and *Hand Machines* for the purpose of printing, instead of following the old, sure, and beaten track, by means of Presses, which are, unquestionably infinitely superior in every point of view: and we boldly assert, that there are presses now in use, as far superior to the machines, as is the meridian sun's bright rays, when placed in competition with the murky clouds of night; which assertion we doubt not we shall most satisfactorily establish (in the opinion of all candid and unbiased minds) before we have concluded this brief article.

It appears that the invention of Stereotype, like that of Printing, is somewhat involved in mystery; all doubts respecting the latter we flatter ourselves have been fully solved in our arguments on that subject in Vol. I.; but, with respect to the former, we conceive that its author is not worth the pains of our tracing; and more particularly when we reflect, that so many of our brethren who well deserve (from their ability) a comfortable subsistence, and who ought to be enabled (from their profession,) to move in a respectable sphere of life, are now, through this process, reduced to a very humble pittance, thereby bringing the first Art in the world down to a level with the lowest; and, at one season of the year, nearly one half of the valuable body of men alluded to may be considered as totally destitute of employ, on account of the standard works, which was the summer's stock work, having been Stereotyped.

We find that William Ged, a goldsmith of Scotland, from the suggestion of a friend (a printer) left his business in 1726, and turned his attention to this subject; having spent all his property in experiments, he engaged with a person to advance him money, who did not fulfil his engagements; he afterwards entered into a contract with two others, named Fenner and James, who obtained the patent for the University of Cambridge, which was made out in the name of Fenner; they soon after disagreed, when Ged was turned out: on the death of Fenner, the University refused to renew the patent to his widow. The new Patentee was ordered to resort to the old process of printing; and we find that all the plates of the Bible and Common Prayer were sent to the Chiswell Street Foundry, and there melted down in the

presence of a confidential agent appointed by the University. Ged died in poverty soon after, and his companions failed in realizing their fancied expectations; thus ended Stereotype at this period, in the total failure of all concerned. Experiments were afterwards made upon it by several others, but not continued: about 1804, it was again revived by the late Earl Stanhope,* assisted by Mr. A. Wilson, a printer, who turned his whole attention that way, and entered very extensively into it: His Lordship's idea was, that Stereotype editions should be sold very cheap; but we find that the first Stereotype works were charged full as high, or higher, than by the regular mode. In the *Monthly Magazine* for April, 1807, it is stated, "that Stereotype had not been adopted by the Booksellers of London, and that it does not appear that more than twenty or thirty works would warrant the expense of being cast in solid pages, consequently the loss would greatly counterbalance the advantages,"&c. To this, Mr. Wilson rather angrily replied, and accused them of making mistakes, which were calculated to mislead the public; but from his account we are fully satisfied, if the Editor went to one extreme, Mr. Wilson's argument carried him into the other; and we boldly assert, that it does not possess those advantages that Mr. W. would lead us to imagine, for we find that he overstocked himself with copies of various standard works, the sale of which was very slow, whilst those from types were in high repute: having failed in his attempt to force a market, he at length resolved to leave the business altogether, when he sold every thing off, not being able to find a person to continue it: therefore he made little or nothing of this boasted discovery.

The following arguments have been advanced in opposition to the practice of this invention; First, the expense of composition, and the trouble of proving each page separately for several times, is much greater than in the common mode: Secondly, the composition is charged a higher price, and the expense of Stereotyping, together with the weight of metal (which may be taken at about one-fourth that of type) must of necessity make the first edition come

* Mr. Tilloch and Mr. Foulis of Glasgow brought Stereotype to a degree of perfection, without knowing, as they state, of the discovery by Ged; and for which they took out patents both for England and Scotland; but it appears that they made no use of them. It is said that the late Earl Stanhope received his first instruction from Mr. Tilloch, which was completed by Mr. Foulis: Mr. T. observes (in a brief account of the Stereotype process,) that it would benefit both *pressmen* and *compositors*; with respect to the former, we well know that they ever detested it; and, as to the latter, it could only be of service to them, if Mr. T. could prove that men are better off without employment than with it: which, he says, he could *support* if he had sufficient space: in truth, we never consider a man's simple *ipsi dixit* worthy of notice, unless it is borne out by something like sound argument.

very high: Thirdly, Stereotype plates must always be done at iron presses, on account of the vast power required to bring them off; the price for printing is necessarily higher than that of type: Fourthly, the plates once cast must ever remain so, as no alteration in the size of the page, or cut of the type can ever take place, without incurring all the original expense: Fifthly, Stereotype work is never taken by pressmen from choice, on account of the trouble and additional labour required; also from the great impression necessary, the plates are more liable to injury; when the pressman must stop while they are repaired, and should several others be before him, he must wait his turn, which is sometimes a day, or more, before he can go on again; consequently the pressmen never observe a *butter* (unless it be very glaring), because they would be stopped in their progress; hence numerous errors are likely to arise, even by that process which was stated to be perfection itself, and also one of its greatest advantages: Sixthly, the bookseller has, by the old mode the certainty, or nearly so, of detecting, particularly in town, any unjust advantage which might be taken of him, in point of number, by those with whom he entrusts his work: that important security will be wholly done away by plate-printing. He must also be subject to the loss sustained by the damage of the plates, together with fraud by the *"facility with which Stereotype plates are cast from Stereotype plates."* We conceive this last objection which is so highly important, and which will bear the strictest examination, is in itself quite sufficient to deter all persons from giving it the least countenance or support in any way whatever.*

Having briefly touched upon the subject of Stereotype, we shall now take a glance at its allies, the Steam and Hand Machines. The first known attempt at the former was made by two Saxons, of the names of König and Baur, who, we understand, were assisted by three opulent Master Printers: a considerable sum must have been expended, from the length of time that the project was in hand before it was completed; during which period different patents were taken out, because they varied from the original specifications, thus making surely doubly sure: at length this machine, which had been made in obscurity, was brought forth (in 1813-14) to astonish the world by its wonderful action, in receiving and delivering an almost incredible number of sheets per hour; the place selected for this experiment was the Office of *The Times* Newspaper, when the very extraordinary impression that is daily taken of this

*According to an estimate, in an edition of the *Origin of Stereotype*, printed for the Typographical Society at Newcastle-upon-Tyne, we find that there is little return under ten years, upon an edition of 4000, at one 1000 per year; taking interest and all other items, which is a strong proof of our opinion.

'leading Journal,' was struck off in a very short space of time, compared with what would have been necessary by manual labour at the presses, which required such great exertion, that the stoutest constitutions fell a sacrifice to it in a few years, yet others were eager to fill their stations; therefore this could not be assigned as an excuse for their introduction. For the sake of humanity, there is no one, we believe, that would object to the adoption of these machines for Newspapers of an extensive circulation, provided the Proprietors preferred the loss from the destruction of their types, &c. to the advantage derived to them in point of time.* This machine was followed by others, which were erected on the late premises of Mr. T. Bensley, in Bolt Court;† and one was made for Mr. R. Taylor of Shoe Lane.‡ It was expected, no doubt, that these machines would engross the principal works of a long number; from the price at which they offered to take them; but, alas! their castles, which were built in the air, vanished in the clouds on the appearance of an enemy in the field; who, notwithstanding the security, simplified their machine and evaded their patents: these persons, although not printers, set up an office for *stereotype* and *printing by steam*, in opposition to the two first, who had *steam* only; they also made machines for others: from this period rivalry commenced, and each party endeavoured to supplant the other, not as to excellence, but as to cheapness, no matter how it was done; thereby basely tearing down that beautiful fabric of our Art, which had caused so much labour and expense to rear, and those through whose talents and industry it was upheld, are sent as wanderers in our streets! yes, even the very men from whose ability, and the sweat of whose brows, by far the greater portion of the masters derived not only their fame, but also their wealth! Had they followed the doctrine of *conciliation*, in their disputes with the men, instead of *coersion*, and steered clear of the new-fangled articles which have been introduced, we should not now have persons commencing printing who know not the right end of a composing-stick: all this is owing to the above causes, by which the men are deprived of employment: had the

* We are given to understand that the types will not last more than half the time by the machines, consequently the draw-back upon them must be great indeed.

† About five years ago, this gentleman's office was unfortunately destroyed by fire; but the machines (which were in a building in the yard) were the principal articles that escaped devastation: he declined rebuilding the premises, which his son took it upon himself, together with the machines, at which he is now driving an extensive business.

‡ Although Mr. R. Taylor has got a machine, yet all his book-work is done by presses, this gentleman not finding it answer his expectation in that respect.

masters not acted so hastily, we do not believe that any man of character would have lifted a space for those not practical printers; but, alas! the deed is now done.

These machines are composed of large iron cylinders, by which the impression is produced from the form passing under; there are also small rollers, one above the other, covered with composition, which work against each other, and so distribute the ink which falls upon the upper ones, from a box with small holes in the bottom; the cylinders for the impression are covered with blankets, similar to those used at the presses; the sheets are kept to the cylinder with tapes, and when one side is printed, it revolves by means of the tapes and additional rollers, from one cylinder to the other, and is then perfected by the second form: there is great danger attending these machines, accidents not unfrequently happening; therefore the boys employed have a subscription for the support of each other in such cases. At first the cylinder pressed very heavy on the heads and bottoms of the pages, and thereby not only battered the types, but also spoiled the work: but we understand that this objection is obviated by means of iron bearers, which receive the cylinder before it touches the form; there is an evil in this, because they prevent the cylinder from giving that impression which is necessary, therefore this deficiency of power is supplied by an extra quantity of ink. There can be no question but that the types are very much destroyed by them, because the form must tear as it passes under, and consequently force the cylinder round, similar to the action of the copper-plate presses. The works of these machines are very complicated, and of course are often wanting repairs. We are given to understand that the *Hand Machines* are as various in their constructions as the different presses; they are turned by a man, instead of being worked by steam; of course the impression is produced by a cylindrical power, similar to the former; from what we have understood respecting them, it would require a very considerable unnecessary space to attempt any thing like a faint description of them, therefore we shall content ourselves with observing, that the labour of working them by far exceeds that of the heaviest presses ever used, and so violent is the exertion, that the stoutest men that can be found, are not able to stand at them for more than a quarter of an hour, or twenty minutes at a time; there are two men, and they relieve each other alternately: yet we doubt not, but they will in time convince all those that have had any thing to do with them, that they would have acted wise had they not introduced them into their premises.

We are much surprised at the apathy and supineness shewn by the body of Master Printers, with respect to the subject under discussion; they most assuredly had good and sufficient grounds for an application to Parliament, for

a tax that should bring the work so executed, upon an equality with that done by manual labour. We are well aware that machinery is encouraged by Government, but that is done on account of the low price at which the article is vended; but in this case the price is kept up, as neither the printer nor the public receive the benefit; and the families of the men thus thrown out of employ are compelled to seek parochial relief; for it appears that printers, above all other men, are least inclined to turn their hands to any thing out of their own branch of Art; likewise it is a complete bar to improvement, and of necessity damps and destroys that laudable spirit of emulation by which alone perfection is expected to be attained. We feel satisfied that the above would not have met with encouragement from a British Public, had they been aware of the evils attendant on it: they have not only to pay a full price for the work, but also extra poor's rates in consequence of the men being thus out of employ; likewise, they are countenancing the breaking up and destruction of all the energy and talent of that art which was England's proudest boast, and her shield against all the threats of her foreign foes.

From the present state of things, what can reasonably be expected but disorder and confusion, when each master is endeavouring to supplant his neighbour, not as to excellence, but as to cheapness; this they endeavour to do by means of the new-fangled articles* which have been produced; we firmly believe, that if the individuals who have gone out of the beaten road would calmly sit down, and cast up the sums thus unnecessarily laid out, they would be induced to order all such articles off their premises. We should rejoice with the admirers of our Art, could we witness them fired with a spirit of emulation for improvement, instead of the conduct just alluded to, thereby earning that honourable and praise-worthy fame which ought to be the proudest boast of man. They appear to have forgotten, if ever they gave the subject a moment's thought, that they merely hold the Profession in trust for their successors, to use fairly, but not to abuse; so that, when they are called upon to render it up, they may appear in the character of good and faithful stewards; on which account, their names will ever be dear to all those who may hereafter follow them.

* In proof of what we have just advanced, we beg to observe, that we have seen several *hand* machines (which must have cost considerable sums of money) laying idle, whilst the presses were all full of work; now, is it reasonable to suppose, that a printer would pay pressmen for work, if it could have been executed as well, and so much quicker, by his idle machines: no, no, this will not do: there is one of these toys now at a press manufactory, to be broken up; it was offered to us for *Eight Guineas*, the price of old iron; although we doubt not but it cost a few hundreds!!!

We never hear honourable mention of the names of those deceased worthies to whom we are indebted for the guardianship and early improvement of printing, but we immediately ask ourselves, in what light will succeeding generations view the feelings and public spirit of the printers of the nineteenth century, when contrasted with the lasting remembrance of those eminent men of former days, who, from their laudable exertions in improving our Art have built for themselves and their posterity an imperishable monument; which, to the noble and aspiring mind, is far beyond the diadem of a prince: wealth, compared with this honest and praise-worthy earned fame, is altogether light as a feather when placed in the balance.

HERE LIETH

THE OUTER FORM OF

TYPOGRAPHY PAGE,

A Printer

OF THE FIRST MAGNITUDE,

who for

Distributing the *Pearl* of Charity,
was perhaps a *Nonpareil*.
He was faithful and honest to his Companions,
though nearly brought to the *Gallows* by them.
His humanity was great,
and his Life truly *Justified* with good *Rules*.
Early in Life he was called to the *Bar*,
and was happy when employed for the service of his Country.
He was always bold to *face* the *French Cannon*
with a *Broadside*;
but was sorry to have the *English* destroyed.
He was not bigoted to any Religion;
but a strenuous advocate for *Justification*,
and an enemy to *Monks* and *Friars*.
He often *Imposed* on himself for the benefit of others.
He was no Critic;
though he *Corrected* the errors of other Persons,
he did not forget a proper attention to his own.
His character through Life was of a good *bright Colour*:
He seldom went too far in his *Pull*.
When *laid* up in the *Sick* Room of Disease,
he complained his head was in *Pie*.
Death *locked up* his Mortal Form,
on the tenth *Quire* of his last *Token*,
when he had patiently *pulled off* his *White Paper*,
with hopes of a glorious *Reiteration*;
in full assurance of a *Second Edition* being better than the first.
His *Light being out*, he was *papered up* in his *Coffin*,
and his remains solemnly interred
in the peaceful *Wool-Hole*.

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THE ORIGIN OF PRINTING.

A CANTATA.

WRITTEN BY MR. DODD.

Recitative.

When on the Greeks and Romans learned page,
The barb'rous Goths (the scandal of that age)
Plac'd their destroying hands, fair Science mourn'd,
And Learning was to deepest ign'rance turn'd.
Long in the darksome womb of hiding Time,
The Arts lay hid, banish'd from ev'ry clime;
But when the Medician heroes liv'd,
The blooming Science once again revir'd.

Air.

Tune.—*Shepherd when you saw me fly.*

See the Arts erect their heads!
See the Muses tune their song!
Learning o'er each clime now spreads
Where the Goths had triumph'd long;
Every scribe resumes his pen,
Brutes are poliah'd into men.

Recitative.

But sage Minerva thought the pen too slow,
To make each useful Art and Science flow
Through ev'ry state, with necessary haste,
To recompense the days of darkness past,
Then she to *Faust* and *Schoeffer* did impart,
That friend to Learning's cause, the Typographic Art.

Air.

Tune.—*I'll range round the shady Bowers.*

Hail noble Art, by which the world,
Though long in barbarism hurl'd,
Sees blooming Learning swift arise,
And Science waft'd to the skies.

Aided by thee, the printed page,
Conveys instruction to each age;
When in one hour more sheets appear,
Than Scribes could copy in a year.

Air.

Tune.—*Roast beef of Old England.*

Then all who profess here that heaven-taught Art,
And all who have Learning and Science at heart,
Come join in my ditty, and each bear a part
To sing in the praise of good Printing,
And to sing in that noble Art's praise.

Though every *Compositor* a *Galley* must have,
Yet think not by that a Compositor's a slave,
For freedom he labours, and freedom will have,
To sing in the praise of good Printing,
And to sing in that noble Art's praise.

Though he daily *Imposes*, 'tis not to do wrong,
And, like Nimrod, he follows a *Chase* all day long,
And believes a good *Slice*, or he's much in the wrong,
To sing in the praise of good Printing,
And to sing in that noble Art's praise.

Though *Correction* he needs, all mankind does the same,
If he *Quadrats* his matter, he is not to blame,
For to *Justification* he lays a strong claim,
Then sing in the praise of good Printing,
And sing in that noble Art's praise.

To complete this great Art, the *Pressmen* all come,
And each handles his *Balls*, his *Frisket*, and *Drum*,
And to make good impression the *Platten* rolls home,
While he sings to the praise of good Printing,
And sings in that noble Art's praise.

But, as the old proverb relates very clear,
We're the furthest from good when the church we are near,
So in each Printer's *Closet* do *Devils* appear:
Who roar in the praise of good Printing,
And sing to that noble Art's praise.

Then let us regard, as the Aider of Art,
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